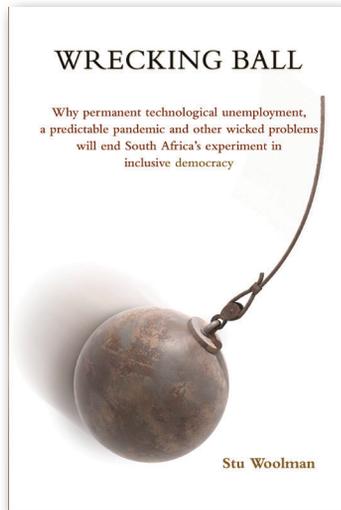


# WRECKING BALL

Why Permanent Technological Unemployment,  
a Predictable Pandemic and Other Wicked Problems  
Will End South Africa's Experiment in  
Inclusive Democracy

by

**Stu Woolman**



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## WRECKING BALL

Why permanent technological unemployment, a predictable pandemic and other wicked problems will end South Africa's experiment in inclusive democracy

*Wrecking Ball* explores, in an unprecedented manner, a decalogue of wicked problems that confronts humanity: Nuclear proliferation, climate change, pandemics, permanent technological unemployment, Orwellian public and private surveillance, social media that distorts reality, cyberwarfare, the fragmentation of democracies, the inability of nations to cabin private power, the failure of multinational institutions to promote collaboration and the deepening of autocratic rule in countries that have never known anything but extractive institutions. Collectively, or even severally, these wicked problems constitute crises that could end civilisation.

Does this list frighten you, or do you blithely assume that tomorrow will be just like yesterday?

*Wrecking Ball* shows that without an inclusive system of global governance, the collective action required to solve those wicked problems falls beyond the remit of the world's 20 inclusive democracies, 50 flawed democracies and 130 extractive, elitist autocracies. Flawed democracies and autocracies that already struggle to produce goods necessary for their own citizens to flourish, are simply incapable of committing to international arrangements that address the existential threats posed by the decalogue of wicked problems.

This then is our children's inheritance: Dystopias far, far worse than the polities that we ourselves have known. What, if anything, can mitigate the harms that are our legacy?

*Wrecking Ball* offers, as an answer, a ground-breaking analysis of South Africa's political economy. It demonstrates that this country's elitist and extractive political and economic institutions not only make resolution of ongoing domestic crises unattainable, likewise, they make meaningful responses to wicked problems impossible.

Smart people think they have all the answers. Without laboring under any such illusions, Martin Luther King Jr eloquently opined: 'The arc of the moral universe is long, but it bends towards justice.' But what will happen, King would acidly ask, if we continue to dawdle, and simply run out of time?

*Wrecking Ball* similarly operates under no such 'smart' pretenses, and undeterred and unmatched ventures into terrains traversed by truly great political economists: Smith, Ricardo, Marx and Keynes. By knitting together what we all know to be the facts, with cutting edge theory in economics, sociology, history and political science, the book paints an unflinching portrait of where we are, and where we are headed.

Are we ready to be honest with ourselves about the likely future of this overheated, overpopulated planet?

# WRECKING BALL

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a Predictable Pandemic and Other Wicked Problems  
Will End South Africa's Experiment in  
Inclusive Democracy

**Stu Woolman**



NISC (Pty) Ltd: Makhanda, South Africa

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## DEDICATION

To my dear friend, George Abraham, for a decade of discussions about the pitched battle between the extractive, elitist political and economic institutions that dominate our lives and the rather riven and embattled democratic polities to which we both remain committed. With respect to the title of this work, as George would be quick to agree, it refers to far more than novel technological advances and their disruptive consequences. The title reflects a common pattern playing itself out across a host of domestic and global crises. About these commonalities, George has shared his granular understanding of the array of wicked problems surveyed in this book with generosity and without ego. I hope that this book does justice to his capacious imagination and his ability to impose some degree of explanatory order on an extremely chaotic world.



Because people who couldn't imagine themselves capable of evil were at a major disadvantage in dealing with people who didn't need to imagine, because they already were. ... That evil wasn't glamorous, but just the result of ordinary half-assed badness, high school badness, given enough room, however that might happen, to become its bigger self. Bigger, with more horrible results, but never more than the cumulative weight of ordinary human baseness. [In the end, there were] ... no comets crashing, nothing you could really call a [full-scale] nuclear war. Just everything else, tangled in the changing climate: droughts, water shortages, crop failures, honeybees gone like they almost were now, collapse of other keystone species, every last alpha predator gone, antibiotics doing even less than they already did, diseases that were never quite the one big pandemic but big enough to be historic events in themselves. And all of it around people: how people were, how many of them there were, how they'd changed things just by being there.

William Gibson *The Peripheral* (2015)

Understanding is never ending and therefore cannot produce final results. It is the specifically human way of being alive; for every single person needs to be reconciled to a world into which he was born a stranger and in which, to the extent of his distinct uniqueness, he always remains a stranger. Understanding begins with birth and ends with death ... Causality ... is an altogether alien and falsifying category in the historical sciences. Not only does the actual meaning of every event always transcend any number of past 'causes' which we may assign to it, this past itself comes into being only with the event itself. Only when something irrevocable has happened can we even try to trace its history backward. The event illuminates its own past; it can never be deduced from it.

Hannah Arendt 'Understanding and Politics' *Essays in Understanding* (1954)

'It ain't over, til it's over.'

Yogi Berra (1973)

'But when it's over, it's over.'

Richard Adelstein (1985)

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To the University of the Witwatersrand (Wits), and the Elizabeth Bradley Chair in Ethics, Governance and Sustainable Development, for affording me the time to poke around in areas of interest more closely aligned to the real world in real time, and Dean and Professor Wesahl Domingo of the Wits Law School for pushing me to finish and to share my work.

To Professor Firoz Cachalia, for his unstinting support, his comradeship, his unlimited intellectual curiosity, his willingness to talk for hours and hours until the last cappuccino and grappa are served so as to better my partial and inadequate understanding of South Africa and to temper my pessimism with hope; his modelling of personal, academic, moral and political integrity; and finally, his willingness to throw his weight as Director of the Mandela Institute behind me and this project.

To Professor Theunis Roux, who read two different versions of the manuscript, led a public panel discussion, provided copious notes and, after a final phone call, nudged me toward an institutional analysis of the suite of problems addressed in this work – a form of analysis that provides the book with greater explanatory power.

To Professor Penny Andrews for organising the first ‘book talk’ at New York Law School in November 2019 and thereby creating an incentive to finish a first draft.

To Wesleyan University and Professor Don Moon, for providing me with a room with a view as a visiting scholar, as well as the time to complete a large part of this work.

To Professor Richard Adelstein, of Wesleyan University, for whom I keep writing variations of the same book. He pushed me to think ‘big’, while also reminding me that ‘small is beautiful’. He – along with too many other Wesleyan professors who deserve mention – taught me to gaze beyond my own parochial horizons, and to treat all other sentient beings as possessed of intrinsic worth.

To Ruth Kruger, whose sustained and hard-nosed engagement with this book makes me appear far sharper than I truly am.

To Mike Schramm, my publisher, for believing that this book contains ideas worth sharing, allowing me to develop those ideas over time, and forcing me to get the book out there at the right time.

To Professor Jon Klaaren, for continuing to believe in my commitment to experimentalism, development theory and small wins – even if they may not generate the bigger wins that South Africa requires.

To Justine Neke, for cleaning up my act and making this particular performance so much better.

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## THE DEFINITION OF WICKED PROBLEMS, REPURPOSED

When I was just a boy, the mayor of the city of New York used to show up regularly at subway stops, and accost patrons in barber shops, to pose a simple question: ‘How’m I doin’?’ An avuncular manager of a sprawling diverse metropolis, Ed Koch engaged or schmoozed with his seven million fellow citizens to find out what they actually thought needed to be done. He didn’t pander. An optimistic, independent Democrat, elected to office in 1977, Koch stood up to landlords with respect to rent control. He fixed dilapidated bridges and streets. Affordable housing became a reality. Neighbourhoods began to bounce back. He stood up to unions where such fights were necessary to keep the city solvent. New York’s finances improved. However, despite his liberal reputation, his support for the death penalty generated a warranted wariness amongst some minority groups, while drawing more of the middle class into his sphere of influence. As a result, he won both the Democratic and Republican primaries in 1981 – a feat never before achieved by a mayoral candidate. Four years later, he captured 78% of the vote. That’s politics: in the most diverse city on the planet, he managed – for a decade – to overcome various problems of collective action. With widespread support, he steered a once bankrupt city back toward the production of public goods: improved infrastructure, better housing, proclamations that declared Gay Pride Week in 1983 and legislation that added sexual orientation to the city’s anti-discrimination law, and which ultimately extended employee benefits to the domestic partners of city employees.

But the crack vials in hallways, a tepid response to the nascent AIDS epidemic, and growing homelessness caused his popularity to wane. In 1990, Koch was replaced by New York’s first African-American mayor – David Dinkins – elected to address a host of other problems of collective action. While Koch succeeded, for a lengthy time, in bringing a city of seven million people with substantially disparate interests, needs, views and historical fortunes together to resolve challenging problems, ultimately his views and those of his constituency diverged. Redlining, poor public schooling, dilapidated, ill-conceived housing projects and other systemic forms of both public and private systemic discrimination against communities of colour, on the one hand, and the growing influence of the financial sector and other high-end service industries, the increased affluence of Manhattan inhabitants and the exorbitant costs of living that pushed many ‘city’ dwellers into outer boroughs, on the other, generated a host of problems for which the mayor was unsuited by disposition. Another mayor was given the mandate by the electorate to address such social problems. Most cities, states, provinces and nations face similar endogenous problems. Whether they address problems of collective action adequately depends largely upon the inclusivity of extant political and economic institutions and, as importantly, the entrenchment of the traditions and the practices upon which these political and economic institutions rest.

Wicked problems – what I have off-handedly called ‘problems of collective action on steroids’ – differ from run-of-the-mill problems of collective action (see Chapter II) in three fundamentally important respects.

First, many of the problems adumbrated below have the capacity to bring the world to a halt or to alter the human condition in such a destructive fashion that it no longer resembles civilisation as we currently understand it (however flawed it may be.) The following decalogue of plagues, which have proven impossible to resolve, could, on their

own, or through interaction with one another that tends to accelerate each other, bring about a catastrophic end to this period of human existence:

- nuclear proliferation;
- climate change;
- natural resource scarcity;
- pandemics;
- the alteration of inclusive democratic institutions – in the minority of nations that count as full democracies or flawed democracies (70 of 200 states) – into extractive and elitist institutions;
- the manner in which artificial intelligence, automation and technological disruptions lead to:
  - permanent technological unemployment,
  - forms of social media that undermine our capacity to have meaningful engagement (about facts, and thus social issues) within, between and among nations,
  - the demise of privacy (for which most individuals must be held accountable when they give it away for quick Facebook dopamine hits) and disturbing increases in the extent of public surveillance of individuals and communities by states that have adopted China’s near-perfect big brother technology,
  - the use of technology to conduct cyberwarfare between nations or to undermine elections (that would otherwise be free and fair);
- the fragmentation of many a democratic nation state over the last 50 years so that it can no longer discharge:
  - its ostensible purpose of providing basic public goods,
  - its original purpose of mediating civil strife under the rule of law, its responsibility to contain non-state actors that undermine national sovereignty or distort their purpose (in what are relatively weak states),
  - its responsibility to cabin the exercise of private power, especially by companies that possess so much pecuniary influence that they can operate outside ‘the lines’ of the various countries within which they operate;
- the fragmentation of multinational institutions designed to promote collaboration and diminish conflict;
- a reversal in prior declining levels of inequality and extreme poverty; and
- the cause-and-effect nature of many of the aforementioned problems on the deepening of autocratic rule in countries that have never known anything but autocracy and the rise of totalitarian rule in countries with traditions of democratic rule (or at least a brief taste of what democracy might mean).

Second, another decalogue distinguishes the nature of wicked problems from more run-of-the-mill problems of collective action. They are crises that may be impenetrable (so far as current scientific understanding goes) and insoluble (given the limited political, social and economic means at our disposal), and that possess many, though not necessarily all, of the following features:

- They lack a definitive formulation.
- No metric exists to identify the point at which a solution has been discovered.
- There may be better and worse outcomes as opposed to true or false results.
- An absence of adequate tests makes it difficult to vindicate a final optimal outcome.

- Some problems tend to require one-shot responses rather than allowing for trial and error.
- The complexity of a problem complicates our ability to assess whether all possible solutions have been identified.
- The specific nature of wicked problems often limits the usefulness of a solution to one wicked problem to another wicked problem.
- One wicked problem might actually be a function of another wicked problem; or worse still, wicked problems of different kinds might actually reinforce and accelerate one another.
- Significant discrepancies may obtain between explanations for and the extent of a wicked problem.
- Policymakers often have no margin for error given the gravity of the wicked problem as well as the possibility of severe unintended negative consequences that might flow from their proposed solutions.

Third, even if we had some partial solutions to the first decalogue of ‘horribles’, five more features characteristic of wicked problems make their resolution extremely difficult, if not fundamentally impossible. First and foremost, humanity lacks the centralised, global authorities needed to address these global problems (collectively). Those global institutions that do exist exercise virtually no binding authority or power. In other words, international authorities – such as the United Nations – remain incredibly weak and possess limited coercive power over 200 sovereign, nation-state members (their respective sub-publics, their unique constitutive associations) and their roughly eight billion individual citizens. Second, time is running out on solutions to such problems (e.g., nuclear proliferation and climate change now have us at 1 minute and 20 seconds on the Doomsday Clock created by the Bulletin of Atomic Scientists after World War II – the closest we’ve ever been to self-annihilation). Third, those charged with resolving wicked problems are often their primary cause. Fourth, human beings exhibit an irrational propensity for discounting existing dangers or imminent harms and thus push the requisite response into the future. Fifth, the persistence of wicked problems flow, in large part, not just from the absence of cooperation amongst nation-states, but from the nature of the roughly 200 nation-states on the planet. Of those 200 nations, only 20 or so can be deemed fully inclusive democracies. Another 50 have been described as flawed democracies. That head count leaves roughly 130 nations best characterised as authoritarian – and disinclined to follow modern conceptions of democracy and human rights. In addition, their extractive political and economic arrangements make them far less likely to cooperate with other nations – save on a transactional basis. They act generally in terms of their own cramped understanding of ‘national’ interest. In many such instances: ‘L’etat c’est moi.’ However, transactions between individual authoritarian states rarely provide the basis for addressing the existential threats identified above. Indeed, these states are, more likely than not, to exacerbate existing wicked problems and enter into conflicts with one another that accelerate these wicked problems. This propensity to undermine efforts to resolve wicked problems is largely a function of non-representative leadership that cares not a wit for matters that do not involve the consolidation of their grip on political power and the accumulation of wealth that follows from their hold on power.

Let's return to New York for a moment, before we end this exercise and begin the book. If Ed Koch were to somehow pop out of a subway stop, and ask us – with respect to the various wicked problems identified above – *How'm I doin'?* – we'd likely look at him as if he were crazy. Though New York happens to be a big, well-resourced city, 'hizzoner' hardly possesses the power to determine how we would address such wicked problems as nuclear proliferation, climate change and resource scarcity, global pandemics, novel technologies that disrupt employment, politics and privacy, or the fragmentation of nation states and multinational institutions. These exogenous problems certainly exacerbate the crises faced by New Yorkers (and cities around the rest of the world). However, they are not strictly endogenous emergencies that a mayor – pick your favourite city – enjoys the power to resolve. Of course, your favourite mayor might cooperate with other officials elsewhere. But that's still a far cry away from securing the cooperation and the agreement on the way forward from the 200 nations and roughly eight billion other human inhabitants on the planet. At the moment, our answer to the mayor wouldn't just be 'not so good'. It would be 'not even close'.

# PROLOGUE

## Predicting SARS-CoV-2, Pandemic Mismanagement and How COVID-19 Has Accelerated Permanent Technological Unemployment

### A. Schadenfreude, Virus X, COVID-19 and a Lack of Healthcare Capacity

Schadenfreude is not a good look for the beginning of a book.

Hannah Arendt and Dr Suess would surely agree. But you see ...

I presented the penultimate draft of this work at New York Law School's South Africa Reading Group on 22 November 2019.<sup>1</sup> My conclusion, at the end of that version, took the following threefold form. First, the wicked problem most likely to be keenly felt in the near term bore the moniker Virus X.<sup>2</sup> Both public health and/or pandemic experts<sup>3</sup> as well as intelligence agencies<sup>4</sup> had already reached a similar conclusion. Second, most countries were woefully underprepared for a new SARS/Coronavirus. Third, a worldwide pandemic might not only kill, directly, many millions of people, but it would likely kill or severely harm hundreds of millions of others through the acceleration of other wicked problems (e.g., a steep slide into extreme poverty, mass unemployment, and climate change.)<sup>5</sup>

---

<sup>1</sup> After the penultimate draft, it took another year (eight months of which were spent writing in bed, like Proust, but with no madeleins) to turn Pinocchio into a real boy.

<sup>2</sup> To understand my use of the notion of wicked problems, first see preliminary pages xv–xviii, then the Introduction, followed by the whole of Chapter II.

<sup>3</sup> Johns Hopkins Center for Health Security *Preparedness for a High-Impact Respiratory Pathogen Pandemic* (September 2019):

Were a high-impact respiratory pathogen to emerge, either naturally or as the result of accidental or deliberate release, it would likely have significant public health, economic, social, and political consequences. Novel high-impact respiratory pathogens have a combination of qualities that contribute to their potential to initiate a pandemic. The combined possibilities of short incubation periods and asymptomatic spread can result in very small windows for interrupting transmission, making such an outbreak difficult to contain.

<sup>4</sup> Nuclear Threat Initiative, Johns Hopkins Center for Health Security & The Economist Intelligence Unit *Global Health Security Index* (October 2019): The report on 195 nations concluded – in a manner that the multiple authors admitted radically underestimated the danger – that: ‘National health security is fundamentally weak around the world ... No country is fully prepared for epidemics or pandemics, and every country has important gaps to address.’

<sup>5</sup> A stark new assessment from the UN's World Food Programme (WFP) found that the economic downturn due to the coronavirus crisis might raise the number of people facing acute food shortages to 265 million. ‘UN Working to Avert Dual Crises as Covid-19 Hits Hunger Hotspots’ The United Nations Department of Global Communications (20 April 2020), accessed at <https://www.un.org/en/un-coronavirus-communications-team/un-working-avert-dual-crises-covid-19-hits-hunger-hotspots>:

That's nearly twice as many as were already suffering from acute hunger. ‘COVID-19 is potentially catastrophic for millions who are already hanging by a thread,’ said Arif Husain, chief economist and director of research, assessment and monitoring at the WFP.

Dr Wilmot James from Columbia University took issue with my three-fold contention. He stated that the experts – in medicine, epidemiology and state security – had set up systems designed (far more than adequately) to manage such a crisis. He alluded to the high score of the United States on the *Global Health Security Index* and a reasonable to middling score for South Africa. I insisted that these scores underestimated a range of other socio-political-economic pathologies as well as the manner in which ongoing human incursions into animal habitats were likely to make viral leaps a perpetual wicked problem.<sup>6</sup> With respect to South Africa, these indices failed to take into account:

- weak, paralysed, hollowed out political structures that could not effectively steward the country;
- an economy in complete freefall that, as of November 2019, could not provide jobs for over 60% of youth;
- radical inequalities in wealth that leave the majority of the country living near the food poverty line, malnourished and extremely vulnerable to food insecurity and any downturn in the economy;
- radical inequalities in access to healthcare and the absence of adequate healthcare capacity should a pandemic surge;
- the devastating triple cocktail of:
  - seasonal influenza (which afflicts 19% of South Africans annually, some 10.5 million people – along with a prior instance of SARS),<sup>7</sup>
  - some 7.7 million South Africans living with HIV and AIDS
  - . (20.4% of the South African population aged 19–49),<sup>8</sup> and

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'Global Hunger Could Double Due to COVID-19 Blow: U.N.' *Reuters* (21 April 2020), accessed at <https://www.reuters.com/article/us-health-coronavirus-un-food-idUSKBN22313U>.

<sup>6</sup> J Hassell, M Begon, M Ward, & E Fèvre 'Urbanization and Disease Emergence: Dynamics at the Wildlife–Livestock–Human Interface' (2017) 32 *Trends in Ecology & Evolution* 55, accessed at <https://doi.org/10.1016/j.tree.2016.09.012>. Only after SARS-CoV-2 hit hard, did the press and public take the warnings seriously. E Newburger 'Wildlife Habitat Destruction and Deforestation Will Cause More Deadly Pandemics Like Coronavirus, Scientists Warn' *CNBC News* (9 May 2020), accessed at <https://www.cnbc.com/2020/05/09/coronavirus-wildlife-habitat-destruction-will-cause-more-pandemics.html>.

<sup>7</sup> B Archer, G Timothy, C Cohen, S Tempia, M Huma, L Blumberg, D Naidoo, A Cengimbo & B Schoub 'Introduction of 2009 Pandemic Influenza A Virus Subtype H1N1 into South Africa: Clinical Presentation, Epidemiology, and Transmissibility of the First 100 Cases' (2012) 206 *The Journal of Infectious Diseases* S148, accessed at <https://doi.org/10.1093/infdis/jis583>. The authors reached the following conclusions about this earlier SARS virus:

The first case was confirmed on 14 June 2009, and by 15 July 2009, 100 cases were diagnosed. Forty-two percent of patients reported international travel within 7 days prior to onset of illness. Patients ranged in age from 4 to 70 years (median age, 21.5 years). Seventeen percent of household contacts developed influenza-like illness, and 10% of household contacts had laboratory-confirmed A(H1N1)pdm09 infection. We found a mean serial interval ( $\pm$  SD) of  $2.3 \pm 1.3$  days (range, 1–5 days) between successive laboratory-confirmed cases in the transmission chain. *Conclusions.* A(H1N1)pdm09 established itself rapidly in South Africa. *Transmissibility of the virus was comparable to observations from outside of Africa and to seasonal influenza virus strains.*

World Health Organization data showed an annual influenza rate between 2015 and 2017 of 19% and found influenza and pneumonia (at 5.2%) to be the second-most leading causes of death after tuberculosis (8,8%). *World Health Organization Country Cooperation Strategy: South Africa* (2017), accessed at [https://apps.who.int/iris/bitstream/handle/10665/136874/ccsbrief\\_zaf\\_en.pdf](https://apps.who.int/iris/bitstream/handle/10665/136874/ccsbrief_zaf_en.pdf).

<sup>8</sup> 'HIV and AIDS in South Africa' *Avert: Global Information and Education on HIV and AIDS* (2019), accessed at <https://www.avert.org/professionals/hiv-around-world/sub-saharan-africa/south-africa>.

- approximately 500 000 active TB cases (80% of the overall population is TB positive and TB is the leading cause of death in South Africa);<sup>9</sup>
- a wholesale lack of competent nurses (and doctors) for frontline Intensive Care Units (ICUs) with only 3 000 beds in a country of 56 million;
  - high levels of diabetes, hypertension, obesity and asthma;<sup>10</sup>
  - a pulmonary pandemic caused by some of the most polluted air in the world (after China and India),<sup>11</sup> 100-fold changes in pollen (and fungus) that flows from significant climate change (greater humidity, rainfall and near-perpetual springlike conditions for foreign flora in near-constant bloom) and dust produced by greater desertification;<sup>12</sup> and
  - no control of the active pharmaceutical ingredients (APIs)<sup>13</sup> necessary to produce testing reagents (because China and India control the market and create supply chain bottlenecks).<sup>14</sup>

The authors of a recent pre-pandemic article on public health in South Africa – using Limpopo as a measuring stick – concluded that critical care and ICU facilities cannot meet the criteria for an acceptable level of treatment for *all* South Africans:

In sub-Saharan African (SSA) countries, the high level of critical illnesses is related to the increased burden of HIV and AIDS, malaria and trauma, and to manage these critically ill patients, resources are needed ... In order to curb the demand and supply gap, changes concerning admission and referral practices and/or increased numbers of allocated ICU beds and skilled health care professionals are required. If the number of beds is not increased, not

<sup>9</sup> P MacPherson, L Lebina, K Motsomi, Z Bosch, M Milovanovic, A Ratsela, S Lala, E Variava & J Golub ‘Prevalence and Risk Factors for Latent Tuberculosis Infection among Household Contacts of Index Cases in Two South African Provinces: Analysis of Baseline Data’ (2020) 15(3) *PLoS ONE* e0230376, accessed at <https://doi.org/10.1371/journal.pone.0230376>.

<sup>10</sup> M Werfalli, R Kassanjee, S Kalula, P Kowal, N Phaswana-Mafuya & N Levitt ‘Diabetes in South African Older Adults: Prevalence and Impact’ *National Institute of Health* (2020), accessed at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5933282/>. ‘SA Has World’s Fourth Highest Asthma Death Rate’ *Health24* (27 May 2016), accessed at <https://www.health24.com/Medical/Asthma/News/SA-has-worlds-fourth-highest-Asthma-death-rate-20130506>: ‘According to a recent report by the Global Initiative for Asthma (GINA), South Africa has the world’s fourth highest asthma death rate among five to 35 year olds’: Every year, 1.5% (~60 000) of the 4 million South Africans with asthma die from this condition.

<sup>11</sup> K Balakrishnan et al. ‘The Impact of Air Pollution on Deaths, Disease Burden, and Life Expectancy Across the States of India: the Global Burden of Disease Study 2017’ (2019) 3 *The Lancet Planetary Health* 26e, accessed at [https://doi.org/10.1016/S2542-5196\(18\)30261-4](https://doi.org/10.1016/S2542-5196(18)30261-4); M Krzyzanowski, J Apte, S Bonjour, M Brauer, A Cohen & A Prüss-Ustun ‘Air Pollution in the Mega-Cities’ (2014) 1 *Current Environmental Health Reports* 185.

<sup>12</sup> Interview with Dr Gunter Schleicher, Pulmonologist and Director of University of the Witwatersrand Donald Gordon Medical Centre (28 November 2020).

<sup>13</sup> F Haffajee ‘Stavros Nicolau: South Africa’s Mr Ventilator: The Go-to-Guy for Crucial Medical Equipment Warns of a Triple Threats in South Africa – Flu, Covid-19 and a Shortage of HIV/AIDS Drugs’ *Daily Maverick* (8 April 2020), accessed at <https://www.dailymaverick.co.za/article/2020-04-08-stavros-nicolaou-south-africas-mr-ventilator/>.

<sup>14</sup> C Sprague & S Woolman ‘Moral Luck: Exploiting South Africa’s Policy Environment to Produce a Sustainable National ART Programme’ (2006) 22 *South African Journal on Human Rights* 337; S Woolman & C Sprague ‘Aspen Pharmacare: Providing Affordable Generic Pharmaceuticals for the Treatment of HIV/AIDS and Tuberculosis’ in R Hammann, S Woolman & C Sprague (eds) *The Business of Sustainable Development: Human Rights, Public-Private Partnerships & New Business Models* (1st Edition, 2009) Chapter 13.

all deserving patients will be able to access ICU care. ICUs in tertiary and specialist hospitals are better equipped than those in the rural public hospitals ... Intensive nursing is a speciality and requires further training in a high care setting and only a few registered professional nurses have been trained and some resign after training for greener pastures. The problem was also highlighted by the Minister of Health in Limpopo that as a rural province it is a struggle to attract specialists and senior doctors (Budget Speech 2017). According to the National Department of Health, there are currently over 44 000 funded posts in Limpopo. Of these only 35 450 are filled, leaving almost 10 000 vacant posts in the province. This translates into almost 25% of the workforce. A Human Sciences Research Council (HSRC) report showed the vacancy rate of doctors at 75% and nurses at 67% ... Health facilities infrastructure in Limpopo is often aged and run down, dysfunctional or inappropriate to the needs of patients. Most ... facilities are ... in a dilapidated state. The ICU at the regional hospital has only *four* beds ... [It] is not functional. The South African Medical Association ... in the province raised concerns that the procurement of basic equipment (i.e. casualty ventilators, arterial blood gas machines, ...) moves at a slow pace which leads to rising morbidity and mortality from preventable conditions in regional hospitals. In addition, regional hospitals continue to exist without functional high care units. Challenges of resources in the province place health professionals under stress.<sup>15</sup>

The extreme shortage of skilled medical practitioners – competent nurses and doctors – was ultimately acknowledged by the government when the pandemic hit its first official peak of 650 000 infections in August 2020.<sup>16</sup> Indeed, the government admitted that the shortage of specialised pulmonary ICU nurses constituted ‘a crisis’.

## B. The Palpable Lack of Capacity to Manage the COVID-19 Pandemic

A document produced by the Department of Health, the Department of Trade and Industry and the National Coronavirus Command Council (NCCC) – leaked in March 2020 prior to President Ramaphosa’s three-stage outline of relief efforts, stimulus packages and stay-in-place orders – reflects similarly serious concerns about South Africa’s capacity to manage public health concerns effectively for an indefinite period of time.

This ‘flattened curve’ slide – now ubiquitous in terms of international use – offers insight into how overloaded, broken and dysfunctional the current healthcare system looked to concerned scientists, doctors, epidemiologists and public healthcare officials in South Africa in April 2020 (*prior to any efforts to stem transmission*). From the outset, it recognised that even with a flattened curve, the health system lacked the ability to handle a pandemic. It’s one thing to (*try to*) increase testing and send persons into the field to attempt to assess (*as opposed to actually test*) the spread and the severity of SAR-CoV-2 related illnesses.<sup>17</sup> It’s quite another for the state to claim that it will ‘try’ to increase the capacity of a broken healthcare system, both public and private, incapable of serving all

<sup>15</sup> H Malelelo-Ndou, D Ramathuba, Khathutshelo & K Netshisaulu ‘Challenges Experienced by Health Care Professionals Working in Resource-Poor Intensive Care Settings in the Limpopo Province of South Africa’ (2019) 42(1) *Curationis* 1921, accessed at <https://doi.org/10.4102/curationis.v42i1.1921>. (Emphasis added)

<sup>16</sup> K Cleary & M Low ‘Leaked Government Strategy Document Shows Billions Needed to Avert Healthcare Worker Crisis’ *Daily Maverick* (1 September 2020), accessed at <https://www.dailymaverick.co.za/article/2020-09-01-government-strategy-shows-billions-needed-to-avert-healthcare-worker-crisis>.

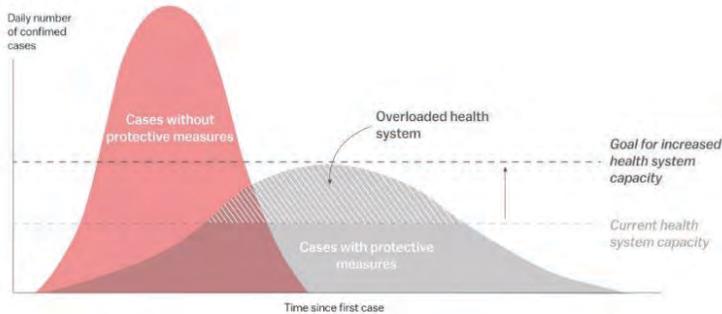
<sup>17</sup> COVID-19 stands for Corona Virus Disease 2019. It describes the range of diseases caused by a novel strain of coronavirus. The International Committee on Taxonomy of Viruses (ICTV) gave the new strain the name Severe Acute Respiratory Syndrome Coronavirus 2 or SARS-CoV-2.



## Risk-adjusted strategy for economic activity

What we know now

There is early evidence that the full national lockdown imposed since 26 March 2020 has successfully limited the spread of the coronavirus. However, there are serious risks associated with lifting lockdown restrictions too soon, or in an unsystematic and disorderly manner.



### SOUTH AFRICA'S RISK-ADJUSTED STRATEGY FOR ECONOMIC ACTIVITY: WHAT WE KNEW IN MARCH 2020

South Africans adequately – when it knew (as it ultimately conceded in August 2020) that it could not be done. Take the wholesale absence of adequately trained nurses required to treat moderate to severe cases of COVID-19:

Nurses make up the largest group of healthcare providers in South Africa. The performance of any healthcare system is directly dependent on the quality of care afforded by these healthcare professionals. Yet in 2015, a report by the University of Witwatersrand revealed that over 60% of nurses admitted reporting that they felt too tired to work while on duty. According to the study, this could be linked to the 70% of South African nurses who admitted to 'moonlighting' or working overtime due to a massive skills shortage in this under-resourced sector ... in 2010, there were an estimated 81,925 public sector vacancies for all categories of nurses in the country<sup>18</sup> ... [O]ne of the more easily definable shortages, is the shortage of nurses specialised in intensive care nursing where it is expected that patients in ICU would be cared for on a one-on-one ratio by specialist nurses.<sup>19</sup>

It's actually impossible to overstate the difference between specialist nursing care in a developing nation – specifically, South Africa – and that level of care that one might receive for COVID-19 treatment in an inclusive (if flawed) democracy. But let's try. Dr Daniela Lamas, a critical care physician, at Brigham and Women's Hospital in Boston, speaks to the palpable difference between the quality of the medical facilities and the expertly trained nurses with respect to positive outcomes at top-end, urban hospitals, and much smaller infirmaries in less densely populated areas:

<sup>18</sup> A Pienaar 'The Real Cost of the Skills Shortage in SA Health Sector' *Africa Health* (June 2016), accessed at <https://www.africahealthexhibition.com/en/media/Press-Releases/the-real-cost-of-the-skills-shortage-in-sa-health-sector.html>.

<sup>19</sup> N Geyer 'A Universal Truth: Are We Heading for No Health Care?' (2016) 20(4) *Professional Nurse Today* 23.

While even the best possible treatment couldn't save everyone, those who survived did so because of meticulous critical care, which requires a combination of resources and competency that is only available to a minority of hospitals in this country. And now, even as we race toward the hope of a magic bullet for this virus, we must openly acknowledge that disparity – and work to address it. We are all familiar with the images of Covid-19 patients lying on their chests, and we know that prone positioning saves lives. But the simple act of turning a critically ill patient is physically strenuous and, if done hastily, treacherous. Breathing tubes and intravenous lines can become dislodged. The head must be repositioned every two hours ... At my hospital, during the height of the pandemic, we formed a dedicated 'prone team' of respiratory and physical therapists who were available 24 hours a day. This spared the bedside nurses and kept patients as safe as possible. Even so, breathing tubes became kinked, and on at least one occasion, we had to urgently replace a breathing tube – a risky procedure. This is why in some hospitals, prone positioning might not have been offered at all. Indeed, the JAMA study found rates of prone positioning to range from just under 5 percent at one hospital to nearly 80 percent at another. Patients would have suffered as a result ... Anyone who has cared for a coronavirus patient knows how quickly they can crash. Thick mucus blocks airways and endotracheal tubes. Oxygen levels plummet. Heart rhythms go haywire. As a doctor, I'll admit that we are rarely the first to intervene in these moments of crisis. Instead, we rely on nurses and respiratory therapists. More times than I would like to count, I have watched with gratitude as their interventions – suctioning, repositioning a breathing tube, increasing the dose of medications to raise blood pressure – avert certain disaster. It is humbling to realize that had our nurses been spread too thin, these relatively small events would have turned catastrophic.<sup>20, 21</sup>

Such concerns appear to have driven initial responses to the pandemic in South Africa. The country watched healthcare systems in congested metropolises such as Milan and New York City reach the breaking point as infection rates rose exponentially and whole hospitals turned into COVID-19 ICUs. The government decided that the de-densification of several townships and informal settlements would mitigate the transmission of COVID-19.<sup>22</sup> Forced removals – even with consultation – did not pan out as planned.<sup>23</sup> Dr Francois

<sup>20</sup> D Lamas "If I Hadn't Been Transferred, I Would Have Died": Conversations about Death from Covid-19 Revolve around Patient Characteristics. But Hospitals Matter, Too' *The New York Times* (4 August 2020), accessed at <https://www.nytimes.com/2020/08/04/opinion/sunday/covid-rural-hospitals.html>.

<sup>21</sup> S Gupta et al. 'Factors Associated With Death in Critically Ill Patients With Coronavirus Disease 2019 in the US' (July 2020) *Journal of the American Medical Association – Internal Medicine*, accessed at <https://doi.org/10.1001/jamainternmed.2020.3596>:

The 35 clinicians across the US found that patients admitted to hospitals with fewer than 50 I.C.U. beds – smaller hospitals – were more than three times more likely to die than patients admitted to larger hospitals.

<sup>22</sup> Somewhat belatedly, the government began to build temporary housing units to de-densify some townships in advance of a possible outbreak. A Mitchley '1 000 Temporary Residential Units to be Built to Reduce Congestion at Mamelodi Hostels' *News24* (5 May 2020), accessed at <https://www.news24.com/SouthAfrica/News/1-000-temporary-residential-units-to-be-built-to-reduce-congestion-at-mamelodi-hostels-20200514>.

<sup>23</sup> J Wicks & A Patrick 'Provinces Brace for "Thinning" of Settlements in Covid-19 Fight: High-Density Areas in Four Provinces Eyed for Covid Relocations' *Sunday Times* (5 April 2020); A Harding 'South Africa's Ruthlessly Efficient Fight against Coronavirus' *BBC News* (3 April 2020). (On the use and the limited capacity of the army, the police and private services to maintain order and not become agents of harm themselves, i.e., through the use of deadly force to disperse crowds, or actual crimes of sexual assault.) A government that suffers from seemingly incurable political paralysis, and that failed to provide adequate housing to the majority of the population through its first 26 years in power, could hardly be expected to

Venter, an internationally renowned virologist and a leading member of the nation's (*first*) COVID-19 task force, implied that the removals constituted a bit of misdirection:

We have the capacity to do large testing, but we've been bedeviled by the fact that the actual testing materials, reagents, haven't been coming ... We're not as wealthy. We don't have as many ventilators, we don't have as many doctors, our health system was in a precarious position before coronavirus ... The country is terrified.<sup>24</sup>

Outside of hospitals, private healthcare providers and pharmacies that serve well off communities, tests were simply unavailable in April 2020 and the backlog became immense.<sup>25</sup> (By the end of May 2020, the government admitted that the logjam had grown to almost 100 000 tests.<sup>26</sup>) Given the paucity of testing reagents and laboratory capacity, the government relied primarily on the 'theatrics' of screening. However, this approach possesses significant limitations. Merely checking for symptoms associated with COVID-19 did not provide accurate tracking information. A large cohort of the population that has been exposed to or has contracted COVID-19 has been asymptomatic or had only mild responses. (Even moderate to severe cases elude superficial screening.) It's pointless to use occasional swab tests to account for all persons who have been infected.

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slap up acceptable and costly alternatives in a few weeks. See, generally, J Dugard & M Ngwenya 'Property in a Time of Transition: An Examination of Perceptions, Navigations and Constructions of Property Relations among Unlawful Occupiers in Johannesburg's Inner City' (2019) 56(6) *Urban Studies* 1165, accessed at <https://doi.org/10.1177/0042098018765402>:

One of the most enduring legacies of apartheid is the racialised in-access to property for the (black) majority of South Africans. The large unmet demand for accessible and affordable residential property close to work opportunities has resulted in widespread unlawful occupation of inner-city buildings, which in the post-apartheid legal order has been shielded by a constitutional prohibition against arbitrary and unjust eviction. Yet, notwithstanding significant protection against eviction, in what remains a largely private property-dominated paradigm, unlawful occupation is an inherently disruptive act that pits ownership against the use/occupation of the same piece of property. Our research indicates that, although residents in Johannesburg's inner city have found ways to deal with their state of unlawful occupation, the occupied spaces currently more accurately reflect a survivalist struggle in a mainstream property ownership-dominated reality than the assertion of a new urban property regime, with occupiers yearning for greater, rather than less, formality and legal authority.

See also S Wilson, J Dugard & M Clark 'Conflict Management in an Era of Urbanisation: 20 Years of Housing Rights in the South African Constitutional Court' (2015) 31 *South African Journal of Human Rights* 472. (Over the first 20 years of constitutional litigation, 15 of the 23 socio-economic rights decisions of the Constitutional Court engaged the s26 right to adequate housing. The authors assess the Court's 'role as arbiter of clashing rights of ownership and occupation in the context of evolving and *inadequately-managed urbanization*.' (Emphasis added). The result of that systemic ongoing failure can be seen in the rapid transmission rates throughout townships in the Western Cape in early May 2020. That a Level 5 lockdown could keep people inside shacks that hold six to a room proved to be a fairy tale. People milled about in the streets. Dense queues for food and social grants could hardly be said to have met the National Command Council's strictures for social distancing. Not even a ham-fisted army could magically produce law and order in spaces where the state has been noticeably absent 26 years *after* the formal demise of apartheid.

<sup>24</sup> J Bradley 'In Scramble for Coronavirus Supplies, Rich Countries Push Poor Aside' *The New York Times* (9 April 2020), accessed at <https://www.nytimes.com/2020/04/09/world/coronavirus-equipment-rich-poor.html>. Dr Venter – along with other leading immunologists and epidemiologists – was dismissed without notice in September 2020 for speaking out candidly about the government's inability to discharge its own stated commitments and for adopting policies without transparency or a scientific rationale.

<sup>25</sup> Teleconference with Dr Lance Josselson (11 May 2020).

<sup>26</sup> C Anna 'South Africa has Virus Testing Backlog of nearly 100,000' *CTVNews* (29 May 2020), accessed at <https://www.ctvnews.ca/health/coronavirus/south-africa-has-virus-testing-backlog-of-nearly-100-000-1.4960080>.

Only adequate testing, along with adequate tracing, can provide a full picture of the total confirmed cases, past and present, in the country.<sup>27</sup> Pooling of tests – also unavailable here – could provide another window into active cases within a community.<sup>28</sup> The government’s Trumpian response as infections peaked in mid-August? Let’s eliminate testing!<sup>29</sup>

Given that most members of the public remain startling and frighteningly unfamiliar with the available science, efforts to contain the spread of the SARS-CoV-2 virus were initially challenged by the circulation of various dubious theories as to why South Africa might avoid the high levels of outbreaks witnessed in many northern countries. Some academics suggested that given that the youthful median age of 19 of sub-Saharan African populations, and the far higher median age of countries that had experienced high outbreaks in infections and fatalities, South Africans would be less susceptible to COVID-19. This author pointed out to a prominent virologist on the NCCC that the median age of South Africans actually fell closer to the world mean and not the average age in the rest of sub-Saharan Africa.<sup>30</sup> (The truth about age and COVID would turn out to be more complex once the data from around the world was in, and epidemiologists could work around the obscurantist machinations of the government.) Other experts hoped that universal TB vaccines would provide some degree of immunity.<sup>31</sup> Another popular

<sup>27</sup> ‘Covid-19 Antibody Tests: Will They Be Reliable Enough to Manage the Pandemic in the Future?’ *Health24* (11 June 2020), accessed at <https://www.health24.com/Medical/Infectious-diseases/Coronavirus/covid-19-antibody-tests-will-they-be-reliable-enough-to-manage-the-pandemic-in-the-future-20200611>.

<sup>28</sup> C Gollier & O Gossner Olivier ‘Group Testing against Covid-19’ (2020) 2 *Covid Economics* 32, 32:

It is well-known that group testing is an efficient strategy to screen for the presence of a virus. It consists of pooling  $n$  individual samples with a single test using RT-PCR. If no individual in the group is infected, the group test is negative. Thus, a single test may reveal this crucial information.

A Mandavilli ‘Federal Officials Turn to a New Testing Strategy as Infections Surge’ *The New York Times* (1 July 2020), accessed at <https://www.nytimes.com/2020/07/01/health/coronavirus-pooled-testing.html>. But see M Senghore, M Savi, B Ngangnon W Hanage & I Okeke ‘Leveraging Africa’s Preparedness Towards the Next Phase of the COVID-19 Pandemic’ (2020) 8(7) *The Lancet Global Health* e84, accessed at [https://doi.org/10.1016/S2214-109X\(20\)30234-5](https://doi.org/10.1016/S2214-109X(20)30234-5). Indeed, by late August 2020, the state had given up on testing. Despite the intentional slowdown, Discovery Health demonstrated that 13 million South African adults (not a mere 650 000) had likely contracted COVID-19 by late August 2020. ‘Discovery Data Points to a Worrying and Potentially Deadly Trend in South Africa’ *BusinessTech* (9 September 2020), accessed at <https://businesstech.co.za/news/lifestyle/432762/discovery-data-points-to-a-worrying-and-potentially-deadly--in-south-africa/>. South Africa’s Health Minister Mkhize conceded the accuracy of Discovery’s findings. Medecines Sans Frontieres backed up Discovery’s infection assessment. B Sokutu ‘South Africa’s Covid-19 Cases May Be at 12 Million’ *The Citizen* (23 October 2020), accessed at <https://citizen.co.za/premium/2371762/south-africas-covid-19-cases-may-be-at-12-million/amp/>:

According to Dr Gilles van Cutsem of Doctors Without Borders, many people were dying of Covid-19 without being tested for the virus, casting doubts on the correctness of the numbers provided daily by the department of health.

<sup>29</sup> By mid-August 2020, the government simply waved the white flag with respect to testing (forget tracing and isolating). On some days in August, testing fell to between 7 000 and 8 000. By December 2020, South Africa registered as few as 3 000 to 4 000 tests per day. ‘COVID-19 Dashboard’ *News24*, accessed at <https://covid-19dashboard.news24.com/#testing>.

<sup>30</sup> South African’s median age is 27.9 years, while the world median age is 29.4. The median age of sub-Saharan Africa, generally, is 19.7. The good doctor conceded this point.

<sup>31</sup> ‘Bacille Calmette-Guérin (BCG) Vaccination and COVID-19’ *World Health Organization Scientific Brief* (12 April 2020): ‘There is no evidence that the Bacille Calmette-Guérin vaccine (BCG) protects people against infection with COVID-19 virus’.

hypothesis held that increased sunlight ostensibly dampens the transmission of virus.<sup>32</sup> None of these initial conjectures proved to have any explanatory power. South Africa's initial good fortune flowed primarily from limited international travel from China and Europe to densely populated cities. The exception through June 2020 was Cape Town and the wider Western Cape region – an extremely popular tourist destination. However, the density of Gauteng and KwaZulu-Natal, and the ease of transmission, meant that Gauteng and KwaZulu-Natal ultimately outpaced the Western Cape in June 2020 and filled to capacity the limited number of public and private ICU beds in the province by the second week of July 2020. Apparently without an explanation for diminishing infections in August 2020, pundits and even medical practitioners-cum-experts punted another theory without any evidence – that South Africans had developed an immunity from exposure to prior coronaviruses. The cause for the decrease was readily apparent to some scholars. Tests decreased by 33% in a single week in early August 2020, and then fell to negligible numbers by the end of August 2020. Yet the extremely high positive result rate remained at a staggering 24%,<sup>33</sup> and led CSIR researcher Ridhwaan Suliman to state that: '[W]e're not out of the woods until we increase testing, significantly reduce the positivity rate and gain a more informed understanding of where the virus is spreading.'<sup>34</sup>

### C. The Declaration of a State of Disaster under the Disaster Management Act

Instead of coming to grips with the specific problems that made pandemic planning in an underdeveloped nation extraordinarily difficult, the President declared a national state of disaster (on 15 March 2020).<sup>35</sup> The government (concentrated in the hands of the NCCC)

<sup>32</sup> J Kishore & S Grover 'Frequently Asked Questions about Coronavirus Disease 2019 (Covid-19)' (2020) 5(1) *Epidemiologists International* 14 (April 2020):

The World Health Organization 'has observed that this infection can be transmitted in any and all areas regardless of climate ... [Temperatures over] 43°C ... might reduce [viral transmission].' It should go without saying that most countries do not experience such high temperatures and that the virus will remain in circulation in both hemispheres: abetted by flu seasons and in the absence of effective treatments or a vaccine.

<sup>33</sup> Compare South Africa with the State of New York: After strictly enforcing public health protocols on long-term lockdowns, ongoing non-essential closures and strict social distancing and transmission stemming mechanisms (mask-wearing), and continuing high levels of testing, tracing and isolating, New York reduced its infection rate to below 1% in late August 2020. Governor Cuomo reinstated partial lockdowns when spikes reoccurred in specific locales in October 2020. L Ferré-Sadurní & J McKinley 'Cuomo Imposes Tight Virus Rules on Areas Hit by Spikes Across State' *The New York Times* (6 October 2020), accessed at <https://www.nytimes.com/2020/10/06/nyregion/cuomo-shutdown-coronavirus.html>.

<sup>34</sup> Suliman's observations are buried in a piece replete with what can only charitably be called 'Fake News'. N Nair, T Farber & J Wicks "'We Have Reason to be Optimistic": How SA Is Taming Covid-19' *TimesLIVE* (9 August 2020), accessed at <https://www.timeslive.co.za/sunday-times/news/2020-08-09-we-have-reason-to-be-optimistic-how-sa-is-taming-covid-19-storm/>.

<sup>35</sup> 'Statement by President Cyril Ramaphosa on Measures to Combat COVID-19 Epidemic' *The Presidency: Republic of South Africa* (15 March 2020), accessed at <https://www.gov.za/speeches/statement-president-cyril-ramaphosa-measures-combat-covid-19-epidemic-15-mar-2020-0000>; Department of Co-operative Governance and Traditional Affairs 'Regulations Issued in Terms of Section 27(2) of the Disaster Management Act, 2002' *Government Gazette* 43107 (318) (18 March 2020), accessed at [https://www.gov.za/sites/default/files/gcis\\_document/202003/43107gon318.pdf](https://www.gov.za/sites/default/files/gcis_document/202003/43107gon318.pdf).

subsequently placed the entire country in a national lockdown for a three-week period from 26 March 2020, and then, in mid-April, extended the ‘hard’ lockdown until 1 May 2020.<sup>36</sup>

#### D. The Hammer and the Dance – South African Style

South Africa’s initial commitment to manage the spread of the pandemic through a risk-adjusted lockdown strategy echoed Tomas Pueyo’s description of ‘The Hammer and the Dance’.<sup>37</sup> Pueyo calls the lockdown – extreme social distancing<sup>38</sup> and limited/essential economic activity – ‘the Hammer’. It’s a strong suppression strategy. ‘The Dance’ reflects the movement toward openness that follows decreases in new infections, hospitalisations and fatalities. After easing off a bit, and then opening up some of the restrictions on social and economic activity:

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<sup>36</sup> Disaster Management Act 57 of 2002. See also Directions issued by Minister of Home Affairs: Measures to Prevent and Combat the Spread of COVID-19. Significant dissent in the legal fraternity exists as to whether the Disaster Management Act with the government run by the NCCC constitutes the appropriate mechanism and the proper constitutional response for engagement with the pandemic. That dissent has already begun to play itself out in litigation filling the courts.

<sup>37</sup> T Pueyo ‘Coronavirus: Why You Must Act Now: Politicians, Community Leaders and Business Leaders: What Should You Do and When?’ *Medium* (10 March 2020), accessed at <https://medium.com/@tomaspueyo/coronavirus-act-today-or-people-will-die-f4d3d9cd99ca>.

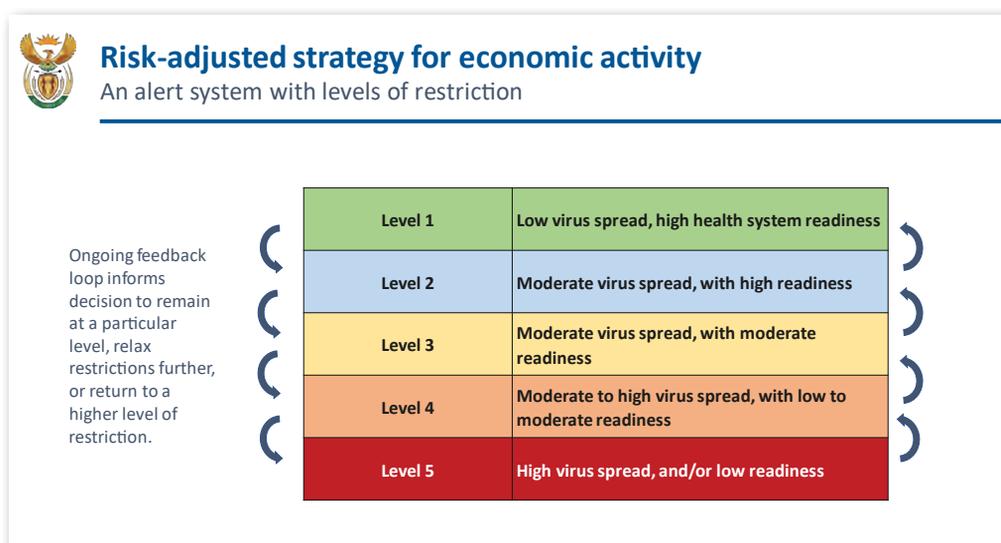
<sup>38</sup> Social distancing encompasses the following norms and legal edicts: stay-in-place orders, quarantines, self-isolation, masks, no direct physical contact and remaining between six feet (to avoid coughs) and 18 feet (to avoid sneezes) apart from others to remain out of the reach of the fine mist of aerosol particulates carrying the SARS-CoV-2. For the scientific basis: J A Lewnard & N Lo ‘Scientific and Ethical Basis for Social-Distancing Interventions against COVID-19’ (2020) 29(6) *The Lancet Infectious Diseases*, 631, accessed at [https://doi.org/10.1016/S1473-3099\(20\)30190-0](https://doi.org/10.1016/S1473-3099(20)30190-0), citing J Koo, A Cook & M Park ‘Interventions to Mitigate Early Spread of COVID-19 in Singapore: A Modelling Study’ 20(6) *The Lancet Infectious Diseases*, accessed at [https://doi.org/10.1016/S1473-3099\(20\)30162-6](https://doi.org/10.1016/S1473-3099(20)30162-6). However, even social distancing, as commonly understood in December 2020, proves insufficient to stem the rate of infection. American Physical Society ‘Social Distancing Isn’t Enough to Prevent Infection – How to Detect COVID-19 Super-Spreaders’ *Science Tech Daily* (28 November 2020), accessed at <https://scitechdaily.com/social-distancing-isnt-enough-to-prevent-infection-how-to-detect-covid-19-super-spreaders/>:

‘My work has shown that exhalations are not isolated droplets but in fact come out as a turbulent, multiphase cloud. This gas cloud is critical in enhancing the range and changing the evaporation physics of the droplets within it,’ said Bourouiba. ‘In the context of respiratory infectious diseases, particularly now COVID-19, this work underscores the importance of changing distancing and protection guidelines based on fluid dynamics research, particularly regarding the presence of this cloud.’ ... The researchers found that below a relative distance known as the integral scale, droplets move ballistically and very fast ... Consider an example where the integral scale is two metres. If you were standing *three meters* ... from an infected person, their droplets would almost certainly reach you in about a minute. ‘It showed us how futile most social distancing rules are once we are indoors,’ said Mitra, who conducted the research with colleague Akshay Bhatnagar at the Nordic Institute for Theoretical Physics, and Akhilesh Kumar Verma and Rahul Pandit at the Indian Institute of Science. Besides traveling further and faster, droplets may also survive longer indoors than previously believed. Research in the 1930s analysed how long respiratory droplets survive before evaporating or hitting the ground. The nearly century-old findings form the basis of our current mantra to ‘stay six feet away’ from others. Physicists from the University of Twente revisited the issue. They conducted a numerical simulation indicating that droplet lifetimes can extend more than *100 times* longer than 1930’s standards would suggest.

To put the point crisply, not even public health officials in developed nations provide the proper guidelines to a moderately engaged public that continues to participate in superspreader events in public (and even at home).

... [t]hen you see what that does to death rates. And once the death rates go up, you have to go back and leave the dance floor and go into lockdown again. And it repeats again and again. And it's dance in, dance out, dance in, dance out. And, basically, that's what the epidemiological models show we have to do.<sup>39</sup>

This mixed model of public health concerns, married to a pragmatic but subtle psychological understanding of how individuals, communities and economies respond to lockdowns, became the model for a substantial number of nations that had the political will to take on the pandemic's dual threats simultaneously. As the chart below demonstrates,<sup>40</sup> South Africa 'formally' committed itself to 'the Hammer' and 'the Dance' as its playbook for the pandemic. Only 'formally': not as a rule of law that constitutes a commitment by the governors to the governed that possesses real purchase. 'Formally', as in a tuxedo, elegant, rather good-looking, but an empty suit when placed back on the rack.



**SOUTH AFRICA'S RISK-ADJUSTED STRATEGY FOR ECONOMIC ACTIVITY: AN ALERT SYSTEM WITH LEVELS OF RESTRICTION [MARCH 2020]**

This strategy has not only been employed effectively by most low-income countries with weak healthcare systems – for example, Vietnam and Rwanda. This aggressive approach has also been successfully employed by high-income nations with strong healthcare and intelligence agencies – such as South Korea, New Zealand, Singapore and Taiwan. The ostensible 'hope' here was that the initial five-week lockdown would enable the country to test more broadly and identify hot-spots so that the country's limited resources could be focused on the suppression of outbreaks and limiting transmission between highly infected and mildly infected parts of the country. As the chart below suggests, over the first month this effort appeared to be successful.

<sup>39</sup> *ibid.*

<sup>40</sup> National Coronavirus Command Council (NCCC) 'Risk Adjusted Strategy for Economic Activity' (April 2020).

## Epidemiology and Surveillance

Through and including cases through 26<sup>th</sup> of April and deaths through 25<sup>th</sup> of April

- The total cumulative cases reported on 26<sup>th</sup> April 2020 is 4 546 reflecting a 4,24% increase or 185 new cases from the 25<sup>th</sup> of April 2020.
- The national case fatality rate, based on deaths from 25<sup>th</sup> April is 1,9%, with the total number of deaths as of the 25<sup>th</sup> of April at 87.

Province	Reported Cases 25 April 2020	Updated Cases Post Harmonisation 25 April 2020	New Cases 26 April 2020	Total Cases 26 April 2020	% Total Cases	Deaths 25 April 2020	Case Fatality Rate
Eastern Cape	488	489	46	535	11,8%	11	2,1%
Free State	111	110	0	110	2,4%	5	4,5%
Gauteng	1304	1303	28	1331	29,3%	8	0,6%
KwaZulu-Natal	847	847	16	863	19,0%	29	3,4%
Limpopo	30	31	0	31	0,7%	2	6,5%
Mpumalanga	23	23	0	23	0,5%	0	0,0%
North West	28	28	0	28	0,6%	0	0,0%
Northern Cape	16	16	1	17	0,4%	0	0,0%
Western Cape	1514	1514	94	1608	35,4%	32	2,0%
Unknown	0	0	0	0	0,0%	0	0,0%
<b>Total</b>	<b>4361</b>	<b>4361</b>	<b>185</b>	<b>4546</b>	<b>100%</b>	<b>87</b>	<b>1,9%</b>



6

### EPIDEMIOLOGY AND SURVEILLANCE IN SOUTH AFRICA

The government claimed that it was buying itself time to:

- purchase equipment required for a delayed wave;
- ramp up testing capacity so that infected individuals and communities could be identified and isolated;
- increase production of masks, personal protective equipment (PPE), ventilators, and any other critical devices to reduce the fatality rate;
- suppress some of the initial carnage created by simultaneously suppressing the beginning of the country's abnormally high winter rates of influenza;
- attempt to stockpile pharmaceuticals necessary for treatment of other diseases and illness, especially HIV and TB; and
- train health workers for both fieldwork and serious infections that require admission to hospitals – and perhaps use the time for enhanced instruction for frontline healthcare workers who would ultimately face the difficulties associated with the treatment of COVID-19.

As we have already glimpsed, and shall see in full, the South African government accomplished none of these aims.

After five weeks, the government lifted 'the Hammer' slightly. People, communities and, most importantly, the economy were given a little space to dance. However, for 'The Hammer and the Dance' to be truly effective, this relationship requires sustained commitments to trial and error, reflexivity and feedback mechanisms.<sup>41</sup> One must be

<sup>41</sup> I've described how these hallmarks of experimentalism operate in terms of consciousness, social systems, politics and constitutional adjudication – within certain adaptive normative constraints – in S Woolman *The Selfless Constitution: Experimentalism and Flourishing as the Foundations of South Africa's Basic Law* (2013). As many recent studies of consciousness reveal, our neurological systems are complex feedback mechanisms designed to create myriad opportunities for trial and error and the production of new stores of knowledge. Individuals – comprised of numerous radically heterogeneous, naturally and socially determined selves – are always experimenting, attempting to divine through reflection and action, what 'works' best: even when

prepared to reinstate lockdowns when transmission and hospitalisation rates rise. Several nations and states have done so after second and third waves or infection spikes. As we shall see, by August 2020 South Africa simply stopped testing and providing accurate information. It repeated its see no evil response through the end of December 2020.<sup>42</sup>

A superficial read of the timeline from the 26 March 2020 declaration of a Level 5 State of Disaster to the 1 May 2020 announcement of a move down to Level 4 suggests that the South African government's decision-making aligned with Pueyo's model. According to extremely unreliable data,<sup>43</sup> the lockdown appeared to slow transmission and warrant an easing of restrictions in movement and on economic activity. The subsequent length of time then spent at Level 4 would ostensibly be determined by whether South Africa remained within the level's express public health criteria. A palpable decrease in viral spread and an increase in the readiness of frontline health workers and hospitals to treat moderate to severe cases would warrant a move to Level 3, assuming that the results of testing, tracing and isolating outbreaks also justified such a movement. However, a sudden rise in the spread, a failure to increase preparedness and test results, or fieldwork that signified an enhanced threat might warrant a return to Level 5.

On 13 May 2020, without any meaningful explanation or the publication of supportive data, and with the SARS-CoV-2 virus spreading rapidly through the Western Cape, the President declared that most of the country would move to Level 3 at the end of May 2020. (He simultaneously stated that the relaxation of restrictions would be more slowly phased in where transmission of SARS-CoV-2 remained high: but that too did not happen.) Perhaps this move – made without the transparency the President promised during the speech itself – should have come as no surprise. As the NCCC's name for the slides suggests – *Risk-adjusted strategy for economic activity* – each level clearly concerns itself with far more than merely saving lives. The name also reflects the creation of a novel political institution that would consolidate power amongst a tiny coterie of officials and leave 50% of South Africans unemployed and hungry.

Given the rather early pronouncements by public health officials that the country ought to move to Level 1 – because it was not following 'The Hammer and The Dance'

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'best' means fully embracing who we already are. Choice architects, those persons charged with constructing the environments within which we operate daily, should (if responsible) regularly run experiments that deliver norms that nudge us away from negative defaults, toward more optimal ends. A social democracy made up of millions of radically heterogeneous, densely populated individuals ought to determine what works best for most of its many constituents within rather capacious, normative constraints (themselves subject to revision).

<sup>42</sup> When a dramatic spike overwhelmed Nelson Mandela Bay in November 2020, and the government was forced to concede that a second wave had arrived in December 2020, it placed minimal restrictions on Nelson Mandela Bay – and elected to retain the nationwide restriction levels at 'business as usual' Level 1, rather than shifting to an appropriately higher level in provinces that it had recognised as having higher rates of infections, illness and fatalities. (A longer analysis of these events appears later in the Prologue and in the Epilogue.)

<sup>43</sup> A Karrim 'Covid-19 Data: SA Still in "First Industrial Revolution", Reporting Infections Via Old "Paper System"' *News24* (2 August 2020), accessed at <https://www.news24.com/news24/southafrica/news/covid-19-data-sa-still-in-first-industrial-revolution-reporting-infections-via-old-paper-system-20200802-2>: [T]he chairperson of the South African Medical Association, explained that outdated hospital infrastructure seemed to be the source of reporting problems. 'The provinces are still on a paper system. We are in the fourth industrial revolution, but our healthcare system is still in the first industrial revolution' [Dr] Coetzee said.

playbook – it’s difficult to believe that all the President’s expert economists, virologists and epidemiologists had reached what they believed to be justifiable conclusions as to how much various important sectors of the economy would rebound under the global recession that had taken root. Is it possible that pragmatic public health approaches and pragmatic economic analytics just happened to dovetail at that particular moment? For example, what if the demand for platinum were only one-third to half of current capacity? Despite the importance of South Africa’s precious metals for numerous industries, commodities’ prices imploded as factories shuttered worldwide and demand (especially from China) fell off a cliff.<sup>44</sup> The full opening of the mining sector at Level 4 came with apparent caveats: social distance spacing should curtail what most mining operations could do. While open cast mines might be 100% operational, other mines may operate at 50% in theory – and 33% in practice – as a result of actual contraction in demand and a precipitous drop in price. Social distancing requirements would merely serve as a mask for the underlying economic drivers of mine activity. On the other hand, the 100% opening up of agriculture ostensibly flowed from South Africa’s precarious food supply chain. However, the global food supply chain did not break. Despite initial hiccups that led to a failure to move livestock or perishable foodstuffs to market due to the contamination of plants with SARS-CoV-2, no food shortage occurred.

Again: This narrative would make perfect sense had it not been followed by a call by some of the President’s most prominent economic and public health advisors (the architects of South Africa’s own ‘Hammer and Dance’) on 15 May 2020, to move the country to Level 2 (allowing all activity but international (leisure) travel to resume) and subsequently to Level 1 without any of the meaningful public health or economic goals for navigating COVID-19 having been met.<sup>45</sup> A number of explanations make sense of their surprise announcement. First, the President had referred to his reliance on unnamed international and domestic experts in his 13 May speech. This Trump-like Twitter of information caught his existing experts off-guard. Second, the information that the experts themselves possessed suggested that the South African government had failed to follow ‘the Hammer and the Dance’s’ indicia for staged reopening of social and economic activities. The President’s advisors publicly declared that:

(1) ‘South Africa is *not achieving* the testing or report levels to contain the spread through diagnosis and contact tracing. This [strategy] gets harder as infection rates rise. Without this [strategy], it is unlikely that the country will stay ahead of the epidemic.’ (2) ‘The 63% of HIV positive South Africans on antiretroviral drugs do not appear to be at increased risk.’

<sup>44</sup> ‘A Shock Like No Other: Coronavirus Rattles Commodity Markets’ *World Bank* (23 April 2020), accessed at <https://www.worldbank.org/en/news/feature/2020/04/23/coronavirus-shakes-commodity-markets>:

The halt in economic activity has taken a toll on industrial commodities such as copper and zinc, and metal prices overall are expected to fall this year. A deceleration of economic growth in China – which accounts for half of global metal demand – will weigh on industrial metal prices.’ The demand for oil will fall by –9.3% globally, more than twice the largest contraction in production in the last 50 years: the –4.1% contraction in 1975 was almost entirely a function of OPEC’s muscle-flexing decision to cut production.

<sup>45</sup> ‘South Africa’s Covid-19 Strategy Needs Updating: Here’s How and Why?’ *The Conversation* (15 May 2020). The striking disconnect between this document and prior policy documents penned by the same cohort turns on their claim that we should now end the Kabuki-like Level 5 attempt to test, trace and isolate in order to keep the infection rate below *the necessary* 1% to stem transmission. As noted above, the infection rate remained at 24% throughout July and August 2020.

(3) ‘[S]ubstantial health costs ... [had been created by the lockdown, including] ... ‘the undermining ... of immunizing children ... and ... the impaired provision of health services to those with comorbidities such as diabetes, tuberculosis ... and hypertension.’ The rest of the collateral damage of COVID-19 – severe food shortages due to unemployment and a failure to timeously deliver the new and increased grants – had also come to pass.<sup>46</sup>

The serious questions regarding the ability of the healthcare community to respond to the pandemic – as well as other pre-existing responsibilities (HIV and TB, as well as to regular mammograms and tests for diabetes) – were raised by numerous experts beginning in May 2020. They repeatedly reiterated these warnings over the ensuing months. Their warnings were buttressed by distressing facts on the ground. Quite early on, a large number of private hospitals were closed due to COVID-19 outbreaks amongst healthcare professionals and a number of patients:

Netcare’s St. Augustine’s hospital has been closed since early April, with Netcare Kingsway doing the same in mid-April. Netcare Ceres was also closed for a week. Mediclinic Morningside in Johannesburg was closed for several weeks for new admissions. Life Healthcare has not indicated any closures related to Covid-19 cases. Some other private hospitals within the groups, such as Netcare Parklands, have closed emergency departments temporarily. Dr Anchen Laubscher, group medical director of Netcare, says they are keeping the National Institute for Communicable Diseases (NICD) and the Department of Health in the loop but cannot disclose the number of infected staff members. Mediclinic Chief Clinical Officer Dr Stefan Smuts says that ‘a small portion of staff members have tested positive for Covid-19’. According [to an article by Moneyweb], 11 patients, and 79 staff members, including healthcare workers, allied health professionals [9 doctors], and support staff, have tested positive at Mediclinic Morningside. The closures are primarily to allow for sanitation, testing and isolation of staff, and to get clearance from the Department of Labour to reopen. Smuts says: ‘This allows Mediclinic to conduct a detailed period of assessment and deep sanitation in accordance with the necessary protocols.’<sup>47</sup>

Such serious flaws in South Africa’s second world level of private healthcare reinforced doubts about the ability of South Africa’s public hospitals to provide adequate care for seriously ill COVID-19 patients, even under flattened curve conditions. These inexcusable lapses in execution occurred while South Africa’s reported numbers of infected persons still remained extremely low.

An infectious disease specialist and a member of the Ministerial Advisory Committee on Health, Professor Shabir Madhi, argued that the lockdown had not been effective – good on paper; *extremely poor* in practice. In an interview with Mark Heywood, Madhi offered the following observations:<sup>48</sup>

<sup>46</sup> G Ritchie ‘What Happened to the SASSA Food Parcels?’ *Daily Maverick* (9 July 2020), accessed at <https://www.dailymaverick.co.za/article/2020-07-09-what-happened-to-the-sassa-food-parcels/>.

<sup>47</sup> E Schütz (GroundUp) ‘Some Private Hospitals Have Temporarily Closed after Staff Tested Positive for Covid-19: A Drastic Protective Measure Likely to Continue Being Taken as the Pandemic Progresses’ *Daily Maverick* (4 May 2020), accessed at <https://www.dailymaverick.co.za/article/2020-05-04-covid-19-private-hospitals-close-doors-after-staff-test-positive/> citing S Naidoo ‘Coronavirus Cases Escalate to 90 at Mediclinic Morningside, Sandton: Mostly Healthcare and Support Staff Affected as Hospital Remains Closed to New Admissions’ *Moneyweb* (4 May 2020), accessed at <https://www.moneyweb.co.za/news/companies-and-deals/coronavirus-cases-escalate-to-90-at-mediclinic-morningside/>.

<sup>48</sup> S Madhi (in conversation with M Heywood) ‘Flawed Lockdown Strategy Has Served Its Purpose and Should be Discontinued’, *Daily Maverick* (5 May 2020), accessed at [dailymaverick.co.za/article/2020-05-11-flawed-lockdown-has-served-its-purpose-and-should-be-discontinued/](https://www.dailymaverick.co.za/article/2020-05-11-flawed-lockdown-has-served-its-purpose-and-should-be-discontinued/). South Africa is hardly alone in this

- ‘Continuing the lockdown will not stop the wave of community transmissions from hitting South Africa’;
- ‘Continuing [the lockdown] will prolong the ... damage that it is causing’, because ‘[p]eople are battling to access basic medical tests for South Africa’s biggest killer, TB’ and ‘there’s been a 50% reduction in tests for TB, in addition to delayed results’;
- ‘Hospitals are starting to see cases of malnutrition’;
- The state has failed to ‘test sufficiently; it has employed the wrong type of testing and the slow release of results had snatched away government’s chances to significantly slow community infections’;
- The government’s current response was ‘setting us up for greater mortality from non-COVID related illnesses’;
- While public health officials have followed a playbook adopted by other countries, the government has employed an ‘unsustainable test-and-trace strategy’ in which ‘test results take up to two weeks to be released’ – ‘the number of contacts that must be traced ... creates impossible workloads for health workers’.

Dr Mahdi’s fears were confirmed on 29 May 2020. After a range of widely conflicting numbers on the backlog of testing was reported (from 30 000 to 80 000), Health Minister Zweli Mkhize issued a statement that read:

The acting director general was indeed correct when he stated that the backlog was around 80 000. This [statement] ... confirm[s] that the exact figure of specimens that have not been processed is 96 480 as at 25 May 2020.<sup>49</sup>

This candid admission was followed by yet another. The Health Department confirmed that the country had only 2 309 ICU beds. According to President Ramaphosa himself, that figure left the country perilously short of the 25 000 to 35 000 ICU beds that he had committed to creating in order to cope with the severe COVID-19 infections that were expected to peak between August and early September 2020.<sup>50</sup> Those epidemiological calculations matched those that experts had projected in March (prior to the lockdown). Recall that one of the primary purposes of the lockdown was to buy the government time to prepare itself for a large-scale outbreak. Not only did the government fail to test or trace in a manner that would give an accurate picture of the spread of the virus and active COVID-19 cases; it also failed to use the previous three months to prepare for the first peak of the first wave of infections. Shortly after these stunning admissions, the government announced that SARS-CoV-2 infections had reached 200 000. A month later, South Africa shattered the 500 000 mark. By mid-August, the country had recorded 650 000 ‘official’

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regard. Countries that had initial success with lockdowns, testing and tracing experienced a second wave of outbreaks, e.g., Singapore, South Korea and Germany. The United States – with its perverse, deadly failure at the federal level and generally poor response at state level – in many respects mirrors South Africa. In October 2020, the United States – along with India and South Africa – was the best/worst example of how deeply flawed democracies fail their citizens, especially their most marginalized communities. The Black Lives Matters protests occurred against the immediate background of *negative* COVID-19 outcomes: Black and Latino communities have experienced thrice the infection rate of predominantly white communities.

<sup>49</sup> ‘Covid-19 Testing Backlog is 96 480, Government Confirms’ *Polity* (29 May 2020), accessed at <https://www.polity.org.za/article/covid-19-testing-backlog-is-96-480-government-confirms-2020-05-29>.

<sup>50</sup> A Basson ‘SA Needs Many More Beds to be Ready for COVID-19 Peaks, says Ramaphosa’ *News24* (31 May 2020), accessed at <https://www.news24.com/news24/southafrica/news/coronavirus-sa-needs-many-more-icu-beds-to-be-ready-for-covid-19-peaks-says-ramaphosa-20200531>.

infections: a number, given our limited testing, that would prove quite disingenuous. This woefully inadequate response suggests either that the public health concern dimensions of ‘The Hammer and The Dance’ were never compelling drivers of government policy or that the government had a callous disregard for human life. It’s hard to divine any concerted health initiatives that significantly stemmed transmission.<sup>51</sup> By mid-August 2020, with more than 650 000 confirmed infections, the President proudly announced that the country could move to Level 2.

As of September 2020, South Africa had not – based upon publicly available evidence – come close to a demonstration either of readiness to deal with the pandemic or that the high viral spread had significantly diminished. Instead, as Statista demonstrated,<sup>52</sup> when South Africa was compared to Chile and Peru – as each overtook South Africa in terms of official infections in August 2020 – the difference was a function of the fact that Chile and Peru continued to test at the same rate, whereas South Africa virtually suspended testing. Does a plausible explanation exist that makes sense of the government’s failure to follow ‘The Hammer and the Dance’ in a manner that doesn’t reflect a standard South African modus operandi of cooking the books?

The move to Level 4 recognised, expressly, the need to reopen the most important sectors of the economy – finance, mining, agriculture – both in terms of food security and forms of activity required to prevent the collapse of the economy.



**Risk-adjusted strategy for economic activity**  
Alert system: Level 4

	Sectors permitted	Transport restrictions	Movement restrictions
<b>Level 4: Moderate to high virus spread, with moderate readiness</b>	<p><i>All essential services, plus:</i></p> <p>Food retail stores already permitted to be open permitted may sell full line of products within existing stock</p> <p>All agriculture (horticulture, export agriculture including wool and wine, floriculture and horticulture, and related processing)</p> <p>Forestry, pulp and paper</p> <p>Mining (<i>open cast mines at 100% capacity, all other mines at 50%</i>)</p> <p>All financial and professional services</p> <p>Global business services for export markets</p> <p>Postal and telecommunications services</p> <p>Fibre optic and IT services</p> <p>Formal waste recycling (glass, plastic, paper and metal)</p>	<p>Bus services, taxi services, e-hailing and private motor vehicles may operate at all times of the day, with limitations on vehicle capacity and stringent hygiene requirements</p>	<p>No inter-provincial movement of people, except for transportation of goods and exceptional circumstances (e.g. funerals)</p>

**SOUTH AFRICA’S RISK-ADJUSTED STRATEGY FOR ECONOMIC ACTIVITY: ALERT SYSTEM LEVEL 4 [MARCH 2020]**

<sup>51</sup> “Gauteng Health Facilities Have Reached Maximum Bed Capacity” – Department’ *Polity* (2 July 2020), accessed at <https://www.polity.org.za/article/gauteng-health-facilities-have-reached-maximum-bed-capacity-department-2020-07-02>.

<sup>52</sup> ‘Rate of Coronavirus (COVID-19) Tests Performed in the Most Impacted Countries Worldwide as of September 7, 2020’ *Statista* (7 September 2020), accessed at <https://www.statista.com/statistics/1104645/covid19-testing-rate-select-countries-worldwide>.

As I detail in Chapter IV, South Africa already had ongoing depression levels of unemployment (30% overall, 60% for youth) prior to the pandemic. Those socially unsustainable levels were exacerbated by a second technical recession in two years and a final downgrade (in early March 2020) by Moody's to sub-investment status for South Africa's sovereign financial instruments. The levels of risk-adjusted strategy for economic activity from Level 4 to Level 3 and thereon down, as well as a significant increase in social grants, reflected a genuine need to keep the majority of South Africans from starving and to keep what remained of the economy afloat.<sup>53</sup> The move to Level 2 – even with the world's fifth highest numbers of infections at the time – revealed a brute reality of South African life. Too many citizens (50%) continue to live at or below the food poverty line. The choice between starvation and infection makes manifest the thorough-going failure of political and economic institutions run by a paralysed, still extractive, non-inclusive state. As one author noted in August 2020:

The extension of the corruption game, played by an ever-increasing cohort in both the public and private sectors, to the procurement of vital equipment to fight the Covid-19 pandemic, had one surprising consequence. It caused a reaction from the ruling party. But as is the standard South African move, a new body was proposed by way of an inter-ministerial committee and the possible establishment of Scorpions Version 2.0 ... Why is it that, come a crisis, the default position is always to establish a new unit or summon a new group of experts to develop a policy document, no different from the last? The sensible approach is surely to capacitate the existing institutions with adequate resources, or, if management is the problem, place them under new and competent leadership? But that is simply not done by the ruling party, and the result is that at present there is hardly an institution of government that operates with a modicum of efficiency.<sup>54</sup>

Thus, the Hobson's choice between starvation and infection was entirely of the state's own making. The persistent failure by this flawed democracy to create inclusive political and economic institutions plays a significant role in this work's overall analysis – see Chapter II. However, it's worth detailing here what went wrong when an extractive, elitist set of political and economic institutions had to confront a pandemic qua wicked problem.

The government has struggled, mightily, to expand social welfare grants beyond children and the elderly to the excluded middle that finds itself unemployed and in need of support.<sup>55</sup> The new disbursements would, if made permanent as part of a Basic Income Scheme (again, see Chapter V regarding this possibility), be an extremely desirable and necessary revision of the social contract. However, leaving disbursement to the Ministries

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<sup>53</sup> Cf P Krugman 'We Should Help Workers, Not Kill Them: Unemployment Benefits, An Unheralded Success Story' *The New York Times* (20 May 2020). Krugman writes:

One thing I keep hearing, however, is that we must reopen for the sake of workers, who need to start earning wages again to put food on their families' tables. So it's important to realize that this is a really bad argument.

I take up the benefits of a Basic Income Scheme in South Africa in Chapter V.

<sup>54</sup> P Balthazar 'South Africa's Profound Institutional Failure' *Daily Maverick* (8 August 2020), accessed at <https://www.dailymaverick.co.za/opinionista/2020-08-18-south-africas-profound-institutional-failure/>.

<sup>55</sup> J Seekings 'Who is Responsible for Government's Failure to Deliver?' *Daily Maverick* (3 July 2020), accessed at <https://www.dailymaverick.co.za/article/2020-07-03-who-is-responsible-for-governments-failure-to-deliver/>.

responsible for grants courted disaster.<sup>56</sup> Whether the government could, through the South African Social Security Agency (SASSA), the Department of Social Development (DSD), the Unemployment Insurance Fund (UIF) and the Department of Basic Education (DBE), deliver both enhanced old grants and new grants did not look promising.<sup>57</sup>

<sup>56</sup> Just how bad is the government's grant delivery capacity? In *South Africa Social Security Agency v Minister of Social Development*, the Constitutional Court wrote:

This is yet another application for the extension of an unlawful contract that was declared invalid by this Court in 2014. The application was instituted as one of urgency by the South African Social Security Agency (SASSA) and the Chief Executive Officer (CEO) of SASSA. In an unusual manner, they have cited the Minister of Social Development (Minister) as the first respondent. She is the person to whom SASSA is accountable and in the past cases ... the Minister and SASSA were always on the same side. [2018] ZACC 26 at para 2. SASSA insisted that both the Minister and the CEO responsible for the agency pay their own costs. It also asked for more time to meet the conditions set out by the Court in a large number of prior orders dating back to 2013. The Court further noted:

[4] SASSA was established primarily for the administration and payment of social assistance. Its CEO is, subject to the direction of the Minister, responsible for the management of SASSA. With the concurrence of the Minister, SASSA may conclude contracts with third parties for payment of social grants. Following a tender that was awarded to Cash Paymaster, SASSA and Cash Paymaster concluded a contract in terms of which Cash Paymaster was to provide services relating to the payment of social grants on behalf of SASSA, for a fee. The duration of the contract was five years. [5] But the tender was declared invalid by this Court on 29 September 2013. *AllPay Consolidated Investment Holdings (Pty) Ltd v Chief Executive Officer of the South African Social Security Agency* [2013] ZACC 42, 2014 (1) SA 604 (CC), 2014 (1) BCLR 1 (CC)(*AllPay 1*). Later, and after affording the parties an opportunity to address us on the appropriate remedy, this Court declared the contract between SASSA and Cash Paymaster invalid. *AllPay Consolidated Investment Holdings (Pty) Ltd v Chief Executive Officer of the South African Social Security Agency* [2014] ZACC 12, 2014 (4) SA 179 (CC), 2014 (6) BCLR 641 (CC)(*AllPay 2*). However, this declaration of invalidity was suspended until 31 March 2017 to enable SASSA to award a new tender. Having advised this Court in November 2015 that it would itself provide the relevant services, SASSA failed to do so. Despite being aware in April 2016 that it would not be able to provide those services, SASSA did not inform this Court of this fact until 28 February 2017. On that day, it launched an urgent application which it sought to withdraw the next day. Fortunately, Black Sash had also instituted an application seeking the extension of the suspension of the declaration of invalidity of the relevant contract, on specified conditions.

*Black Sash Trust v Minister of Social Development and Others (Freedom Under Law NPC Intervening)* [2017] ZACC, 8 2017 (3) SA 335 (CC)(*Black Sash 1*) at para 5. In *Black Sash 1*, the Court held that:

[4] South African Social Security Agency (SASSA) and Cash Paymaster Services (Pty) Limited (CPS) are under a constitutional obligation to ensure payment of social grants to grant beneficiaries from 1 April 2017 until an entity other than CPS is able to do so and that a failure to do so will infringe upon grant beneficiaries' rights of access to social assistance under section 27(1)(c) of the Constitution.

[5] The declaration of invalidity of the contract is further suspended for the 12-month period from 1 April 2017 ...

[13] The Minister is called upon to show cause on affidavit on or before Friday 31 March 2017 why—

13.1 she should not be joined in her personal capacity; and

13.2 she should not pay costs of the application from her own pocket.

Not surprisingly, by April 2020, with little progress on any front, and upwards of R20 billion still missing from the fiscus, the Constitutional Court rejected Cash Paymaster Services' application for leave to appeal a Supreme Court of Appeals judgment over its handling of social grants and ordered that it must repay the government R316 million. *Cash Paymaster Services (Pty) Ltd v Chief Executive Officer of the SASSA* [2019] ZASCA 131.

<sup>57</sup> SASSA's regulations, as well as the regulations of various metropolises, appear to be impeding efforts of NGOs to provide food parcels to those South Africans in need. R Davis 'How Red Tape is Hampering the Hungry

As of August 2020, history had repeated itself – no longer as farce, but now as tragedy.<sup>58</sup> SASSA and other government structures responsible for social welfare had been playing ‘three card monte’ with relief money targeted for those who live at or below the extreme poverty line of \$1.90/day. (Not surprisingly, the government chose that disbursement by multiplying it by 30 – R600/month.) The DBE – responsible for critical food schemes in school – decided that feeding the most vulnerable children was no longer in its domain. The DBE or perhaps the NCCC decided – without any public discussion (transparency) – to charge the DSD with the responsibility for the feeding scheme. Meanwhile, no one in a position of authority could agree on who deserved new grants, or how they would be issued. Neither SASSA, the DBE, the DSD nor the UIF, with all the power, the capacity and the political competence that they wield, appeared to know how to deliver either the old grants or the new grants. Of the inoperable novel grant relief system, Jeremy Seekings wrote as follows:

Under the lockdown it has been difficult to get information on what the national government has been doing ... The spokespeople for the national Department of Social Development and the South African Social Security Agency ... appear to have been locked down even more than the rest of us. On 25 June, almost exactly three months into the lockdown, the DSD and SASSA reported to the Parliamentary Portfolio Committee on Social Development ... Much less food has been distributed to poor people under the lockdown than in the preceding months, largely because of the absurd suspension of the national school feeding scheme by the Department of Basic Education ... On the ground, there is chaos. The DBE says that it could not provide school meals over the past three months because lockdown regulations and legal restrictions prevented it. This raises the question: Why didn't the government amend the regulations or amend the legal restrictions? Who is responsible? In its court papers, the DBE passes the buck for feeding schemes to the DSD. If schools were closed, the DSD became responsible. And, the DBE adds, the DSD had extra budget. The DSD is keeping quiet. In its presentation last week, it said nothing about its failure to feed children ... The presentations ... also covered the roll-out of the special Covid-19 Social Relief of Distress grant announced by President Ramaphosa in April. Back then the plan was to roll out grants to eight million people for six months, targeting people whose informal livelihoods had collapsed or who were already unemployed without access to any existing social grant or other income ... The latest data (as of 22 June) show that SASSA *received more than seven million non-duplicated and complete applications*. Of these, a total of *3.2 million applications had been approved, meaning that they had been checked against other databases (social grants, UIF, NSFAS, PAYE) to ensure that applicants had no other easily demonstrable income*. SASSA told the committee that close to two million applicants had been paid ... Of the 3.3 million applications that had been declined, almost two-thirds (2.1 million) were because the applicant appeared on the Unemployment Insurance Fund (UIF) database ... SASSA has said that as many as 85% of these 2.1 million applications may have been rejected *wrongly*. It says that it will sort this out. When? Four months into the lockdown? Five months? Six months? Who is responsible for this situation? SASSA, DSD or the UIF? No one wants to take responsibility. SASSA also shared ... projected costings over six months. The budget for the special Covid-19 SRD grant

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from Receiving Food in South Africa' *Daily Maverick* (5 May 2020), accessed at <https://www.dailymaverick.co.za/article/2020-05-05-how-red-tape-is-hampering-the-hungry-from-receiving-food-in-south-africa/>.

<sup>58</sup> L Chutel 'South Africa's Big Coronavirus Aid Effort Tainted by Corruption' *The New York Times* (18 August 2020), accessed at <https://www.nytimes.com/2020/08/19/world/africa/coronavirus-south-africa-aid-corruption.html>. As South Africans cope with hunger during the pandemic, government efforts at delivering relief have floundered amidst widespread allegations of fraud and mismanagement.

was slashed to *R3.5-billion over six months*: ... a fraction of the *R17-billion budget* apparently envisaged in the president's announcement in April. The revised budget provided for a total of two million grant payments over May and June combined. By October, the number of anticipated grant payments would [be] 2.7 million ... *less than one third of the figure of eight million payments per month imagined back in April* ... The difference appears to be due to the poor rollout of the special Covid-19 grant.<sup>59</sup>

Four dysfunctional organs of state incapable of coordinating an emergency response over almost six months placed millions of citizens in a perpetual state of food deprivation. A supine Parliament, an inert President and other organs of state must have been aware that:

From November 2019 to the end of March 2020, SASSA delivered *zero food* parcels in six provinces despite the fact that, according to the *State of Food Security Report 2019*, almost a third of South Africans experience severe food insecurity, which means the household has either run out of food or in some cases, has gone days without eating a single meal.<sup>60</sup>

Not surprisingly, as of September 2020, SASSA requested that its responsibilities for the new grants be outsourced. Its team of 14 could not manage the influx of requests by email or phone.

Despite such rank incompetence, the COVID-19 Relief Grant has received significant attention and even praise from abroad. According to a November 2020 Brookings Institute Working Paper:

As of mid-October, 18.5 million COVID-19 grants were distributed to 6 million unique individuals since May, resulting from more than 9 million applications. Given the eligibility criteria for the COVID-19 grant and a few assumptions pertaining to takeup, we estimate that the grant has the potential to reach up to 10 million individuals. Together, with the existing Child Support Grant that already reaches 13 million children and 8 million caregivers along with other grants reaching about 5 million recipients, President Ramaphosa's package has the potential to provide much-needed support to about 36 million people, or 61 percent of the South African population. The significant reach of the social assistance component – at just under two-thirds of the country's population – is to be commended.<sup>61</sup>

That looks great. However, the Brookings Institute and closely connected authors at the University of Cape Town provide a more accurate picture when they employ the expanded definition of unemployment. When one's calculations are informed by the expanded definition – those that want to work but are not actively searching for a job as they have lost hope; or want to work but there are no jobs in the area; or were unable to find work that required their skills – the actual success of the COVID-19 Relief Grant looks somewhat different. According to a UCT November 2020 Working Paper, if one uses the expanded definition of unemployment, then 'only 0.33' of the relief grants reached their

<sup>59</sup> J Seekings 'Who is Responsible for Government's Failure to Deliver?' *Daily Maverick* (3 July 2020), accessed at <https://www.dailymaverick.co.za/article/2020-07-03-who-is-responsible-for-governments-failure-to-deliver/#gsc.tab=0>. (Emphasis added)

<sup>60</sup> G Ritchie 'What Happened to the SASSA Food Parcels?' *Daily Maverick* (9 July 2020), accessed at <https://www.dailymaverick.co.za/article/2020-07-09-what-happened-to-the-sassa-food-parcels/>. (Emphasis added)

<sup>61</sup> H Boorat & T Koehler 'Lockdown Economics in South Africa: Social Assistance and the Ramaphosa Stimulus Package' *The Brookings Institute* (November 2020), accessed at <https://www.brookings.edu/blog/africa-in-focus/2020/11/20/lockdown-economics-in-south-africa-social-assistance-and-the-ramaphosa-stimulus-package/>.

intended beneficiaries.<sup>62</sup> Although far from optimal, even this lower figure explains why, despite the rank incompetence of a panoply of government agencies, South Africa staved off mass hunger and malnutrition through the first year of the pandemic.<sup>63</sup> No mean feat. Whether the state can do so again in 2021, without house money, remains to be seen.

### E. Imitation is Not a Sincere Form of Flattery – South Africa’s Liquidity Trap?

At the same time the government undertook this flawed effort at stemming the transmission of SARS-CoV-2, it devised a stimulus and relief package to the tune of R800 billion.<sup>64</sup> It did so by moving about various parts of its existing budget – slashing expenditure in a number of sectors, rather cagily engaging in the restructuring/closure of some state-owned enterprises (SOEs) and the flattening wages in the public sector – in order to:

- keep the finance and banking sector from collapsing and small to medium-sized businesses with an annual turnover of less than R300 000 from going under permanently; and
- increase existing grants and to create new grants designed to counter hunger and social unrest in the country’s most vulnerable communities.<sup>65</sup>

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<sup>62</sup> G Baskaran, H Boorat & T Koehler ‘South Africa’s Special COVID-19 Grant: A Brief Assessment of Coverage and Expenditure Dynamics’ *University of Cape Town DPRU Policy Brief 55* (November 2020), accessed at [http://www.dpru.uct.ac.za/sites/default/files/image\\_tool/images/36/Publications/Policy\\_Briefs/DPRU%20PB%2020\\_55.pdf](http://www.dpru.uct.ac.za/sites/default/files/image_tool/images/36/Publications/Policy_Briefs/DPRU%20PB%2020_55.pdf). (Emphasis added)

<sup>63</sup> ‘South Africa’s COVID-19 Hunger Relief Efforts are Working: Why They Must Continue’ *The Conversation* (15 October 2020), accessed at <https://theconversation.com/south-africas-covid-19-hunger-relief-efforts-are-working-why-they-must-continue-147698>:

The more recent data showed some improvements in adult and child hunger, as well as food security. In Wave 1, 22% of respondents reported that someone in their household had gone hungry in May and June; by Wave 2, this figure had dropped to 16%. Child hunger dropped from 15% in wave 1 to 11% in wave 2. The number of households that ran out of money for food also fell: from 47% in April to 37% in June. Despite these improvements, though, it’s clear that hunger and food insecurity remain at disturbingly high levels in South African households. This is due to the slow recovery of the economy and that the jobs lost in Wave 1 have not returned in Wave 2. Although most groups experienced some ‘bounce-back’ between April and June, employment levels remain well below February levels. [However, without continued government efforts, and a revised social contract, reversals are inevitable.] While long-term policy interventions are being considered by government, greater efforts should also be made that bring together the state, civil society, the private sector, philanthropic organisations, community and faith-based groups to ensure that social relief efforts continue to be provided.

<sup>64</sup> The plan was modelled in part on the US’ original package of some \$2.2 trillion. However, the South African package totalled roughly \$50 billion (in terms of purchasing price parity).

<sup>65</sup> The initial spend, as conceived, broke down roughly as follows:

R20 billion – to fund the health response to fight coronavirus;

R20 billion – an additional amount to be made available to municipalities for the provision of emergency water supplies, increased sanitisation of public transport and facilities, and providing food and shelter for the homeless;

R50 billion – to be used to relieve the plight of those who are most desperately affected by the coronavirus through social grants;

R100 billion – to be set aside for protection of jobs and to create jobs;

R40 billion – set aside for income support payments for workers whose employers are not able to pay their wages;

R2 billion – to be made available to assist small and medium enterprises;

After much hemming and hawing, the Minister of Finance Tito Mboweni finally indicated that South Africa would pursue loans from lenders of last resort to cover expected government shortfalls and stave off, at least temporarily, the collapse of the entire economy.<sup>66, 67</sup>

The ‘stimulus’ package mimicked those offered abroad. However, the government did not ask whether its hand-outs and loans would actually sustain businesses or create multiplier effects. In conditions of high anxiety and long-term uncertainty, people and firms will often sit on the disbursements or piles of cash until the coast is clear. Under such conditions, the state winds up creating a liquidity trap. Savings increase slightly – while the public spending designed to spur investment and hiring fails to stimulate the economy.<sup>68</sup> South Africa created just such a package. Its no-interest ‘loans’ went begging. Relief packages were both delayed or illegally diverted – even if most ultimately reached their intended destination.

Worse still, South Africa may not get a second chance at creating a more targeted package. Having already turned to lenders of last resort, the odds of a paralysed, unreconstructed government delivering a better package appear low. (In October 2020, the President could do no more than an economic recovery plan.<sup>69</sup>) Unless South Africa turns itself around immediately, a panel of experts believes that it will be a failed state by 2030.<sup>70</sup>

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R200 billion – a loan guarantee scheme to be introduced in partnership with the major banks, National Treasury and the South African Reserve Bank, to assist enterprises with operational costs, such as salaries, rent and the payment of suppliers;

R70 billion – amount of tax-related cash flow relief or direct payments to businesses and individuals;

R100 million – value of assistance in the form of loans, grants and debt restructuring provided to small, medium and micro enterprises, spaza shop owners and other informal businesses;

R162 million – finance approved by the Industrial Development Corporation to support companies to procure or manufacture personal protective equipment; and

A potential R80 billion – the amount unlocked after the South African Reserve Bank cut the repo rate by 200 basis point.

<sup>66</sup> The original plan (by Michael Sachs) expressly acknowledges that it could not alone stave off the permanent negative effects of the COVID-19 pandemic on an already failing South African economy.

<sup>67</sup> H Preuss ‘South Africa Latest to Apply for COVID-19 Aid from New Development Bank’ *The Cairo Review* (30 April 2020), accessed at <https://www.thecaireview.com/essays/south-africa-latest-to-apply-for-covid-19-aid-from-new-development-bank/> (\$1 billion loan for medical equipment.)

<sup>68</sup> J Stiglitz & H Rashid ‘Which Economic Stimulus Works?’ *Project Syndicate* (8 June 2020), accessed at <https://www.project-syndicate.org/commentary/stimulus-policies-must-benefit-real-economy-not-financial-speculation-by-joseph-e-stiglitz-and-hamid-rashid-2020-06>.

<sup>69</sup> However, given the dearth of funds in the public coffers, the plan raised more questions than it answered. The government’s intent in terms of actual funds allocated to delivery will become clear when it tables its budget in February 2021. ‘South Africa’s Economic Plan in a Nutshell’ *Bloomberg News/BusinessTech* (16 October 2020), accessed at <https://businesstech.co.za/news/business/441174/south-africas-economic-recovery-plan-in-a-nutshell/#:~:text=South%20African%20president%20Cyril%20Ramaphosa,implemented%20to%20curb%20its%20spread>.

<sup>70</sup> A Sguazzin ‘South Africa Heading Toward Becoming a Failed State’ *Bloomberg News* (10 September 2020), accessed at <https://www.bloomberg.com/news/articles/2020-09-10/south-africa-heading-toward-becoming-a-failed-state-group-says>.

## F. Too Grim a Picture? Comparing Confirmation Bias to Magical Thinking

This author could be accused of suffering from a degree of ‘confirmation bias’ with respect to the negative outlook on both the pandemic, the polity and the economy. However, the government’s failure to follow the advice of its public health experts, epidemiologists and economists, and its desire to press ahead to Level 1 following its inability to enact its own expertly crafted emergency budget, reflects a land in which magical thinking (and politics as usual) has primacy of place.

### *Epidemiology and magical thinking*

The failure to test effectively so as to provide a meaningful picture of the transmission of SARS-CoV-2, the inability to expand capacity for the treatment of the severely ill increased and an early surge in infections through mid-August 2020 that placed South Africa fifth in the world in terms of confirmed infections,<sup>71</sup> supports the proposition that the government has never taken a ‘save lives first’ approach to COVID-19.<sup>72</sup> Worse still, the significant undercounting experienced in other countries with greater testing capacity means the actual number of COVID-19-infections and COVID-19 related deaths in South Africa is certain to be far higher (up to thirteen times the official tallies).<sup>73, 74</sup>

No matter. The President’s concern with opening-up the economy to prevent it from completely tanking led to a decision to move to Level 2 based on the thinnest of evidence – and lots of magical thinking. *Completely tanking as opposed to simply tanking*: the economy had already gone over the cliff in March 2020 due to the institutional failure, political paralysis and corruption of the previous decade.

An article in *Nature* (August 2020) – interviewing Dr Salim Karim, chair of South Africa’s National Health Ministry’s Scientific Advisory Committee – gives the lie to the truly magical thinking that led to the decision by the government to move to Level 2:

[During our planning stages, made fully public by the President and the NCCC, and leaked by experts], [c]ontainment was still on the table early on, but it was a long shot. *We didn’t*

<sup>71</sup> ‘Covid-19 Coronavirus Pandemic’ *Worldometer* (August 2020), accessed at <https://www.worldometers.info/coronavirus/>.

<sup>72</sup> Cf B Mogotsi & M Bearak ‘South Africa is Hunting Down Coronavirus with Thousands of Health Workers’ *The Washington Post* (21 April 2020), accessed at [https://www.washingtonpost.com/world/africa/south-africa-is-hunting-down-coronavirus-with-tens-of-thousands-of-health-workers/2020/04/21/6511307a-8306-11ea-81a3-9690c9881111\\_story.html](https://www.washingtonpost.com/world/africa/south-africa-is-hunting-down-coronavirus-with-tens-of-thousands-of-health-workers/2020/04/21/6511307a-8306-11ea-81a3-9690c9881111_story.html). That effort was stillborn. As one of a number of legitimate public health reasons for ending a sustained lockdown, Dr Salim Abdool Karim noted:

Screen, test, diagnose, contact trace, isolate, treat – it’s the same basic elements for HIV, TB and COVID. The ... trouble with COVID is that we *don’t* have treatment.

To be clear: No treatment, and no genuine effort to screen, test, diagnose, contact, trace and isolate.

<sup>73</sup> D Lu ‘The True Coronavirus Toll in the U.S. Has Already Surpassed 200,000’ *The New York Times* (13 August 2020), accessed at <https://www.nytimes.com/interactive/2020/08/12/us/covid-deaths-us.html> (Regarding undercounting of the death toll, but also the number of infections.)

<sup>74</sup> F Havers, C Reed, T Lim et al. ‘Seroprevalence of Antibodies to SARS-CoV-2 in 10 Sites in the United States, March 23-May 12, 2020’ *Journal of the American Medical Association: Internal Medicine* (21 July 2020), accessed at <https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2768834>; A Heldt ‘Largest Seroprevalence Study in US Shows Vast COVID-19 Undercount: Actual Cases May Be as Much as 6 to 24 Times Higher than Reported, But We’re Still a Long Way Off from Herd Immunity’ *The Scientist* (22 July 2020), accessed at <https://www.the-scientist.com/news-opinion/largest-seroprevalence-study-in-us-shows-vast-covid-19-undercount-67762>.

*really think of it as a realistic option. Of course, we hoped South Africa would end up having some 'mojo' that would protect it better than other countries. But the reality of South Africa dictates otherwise. Large parts of our country do not have the ability to institute social distancing and for people to wash their hands regularly. So, we had to plan that we would not be able to contain it, while hoping that we would. But when I presented the likely scenario to politicians and later to the public around Easter, I explained that we had to face 'a difficult truth' – that we were not likely to be able to contain the virus, and that the spread would probably rise exponentially as we eased lockdown restrictions ... We are 'building the ship as we are sailing it. This virus exposes the fault lines in our society. But I think when we get to a point where sufficient numbers of people have a relative, or family member, or someone in their neighbourhood who has been sick or died from the virus, individuals are moved to collective action so that they can stand united again. When the problem didn't seem so serious, when the lockdown slowed transmission, people questioned the restrictions as those of a nanny state. But I think we are going to realize pretty soon that the best protection we have from this virus is ubuntu – a South African word that means 'I am because you are'. I am safe because you are safe. I saw that in HIV, when people saw the deaths of those close to them, it pushed a change in behaviour. We as a country are built on the principle of ubuntu. We have to rediscover that, or we won't defeat this virus.<sup>75</sup>*

Really? 'Mojo'. Huh. Altering pandemic condition behaviour based upon ubuntu resulted in 13 million infections by August 2020 and millions upon millions more through the end of December 2020. In sum, South Africa health officials:

- offered initial counsel on a hard lockdown that they knew could not work;
- had no clear idea as to how to limit viral transmission;
- knew that a majority of South Africans could not practise social distancing or proper hygiene at home or at work;
- anticipated an explosive surge, yet without adequately modelled numbers could not properly advise government officials;
- would be unable to tell when its rate of infection would dip below 1% for a sustained period of time (while aware that the current rate actually stood at almost 25%); and
- concluded that South Africa's best hope would be (ubuntu) a spirit of humane interpersonal care and recognition that would serve (in lieu of anything else) as a break on the pandemic.

Dr Karim provided neither an accurate account of the past nor an evidenced-based plan for the future. Beyond the muddled 'intent' of advisors and officials and statements that stand in obvious logical contradiction, the article's glib invocation of ubuntu – 'I am safe because you are safe' – cannot be squared with the recognition that the most vulnerable South Africans neither live, nor travel, nor work in environments that allow for proper hygiene and social distancing. The communities hit hardest have been densely populated townships and informal settlements. Only strict enforcement of mask-wearing, social distancing, rigorous and reflexive lockdown levels, relief grants and food parcels work.

The inability to provide adequate safety for its citizens and denizens is but one reason that South Africa had an *official* count of 650 000 positives in mid-August 2020. As epidemiologist, Dr Juliet Pulliam, director of the South African Centre for Epidemiological

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<sup>75</sup> L Nordling "Our Epidemic Could Exceed a Million Cases" – South Africa's Top Coronavirus Adviser" (2020) 583 *Nature* 672, accessed at <https://doi.org/10.1038/d41586-020-02216-5>. (Emphasis added)

Modelling and Analysis at Stellenbosch University, noted, South Africa expected 13 million infections – many asymptomatic, mild, untreated and unrecorded – by November 2020:

In South Africa, which now ranks fifth in the world for total COVID-19 cases, a consortium of modellers estimates that the country can expect a peak in August or September, with around one million active cases, and cumulatively as many as 13 million symptomatic cases by early November. In terms of hospital resources, ‘we’re already breaching capacity in some areas, so I think our best-case scenario is not a good one’.<sup>76</sup>

Dr Pulliam’s numbers fall much closer to truth about COVID-19 infections. Discovery Health’s data showed that 13 million had been infected by late August 2020 – with an excess fatality count of 3.1-times the official death toll tally (45 000 not 15 000)<sup>77</sup>. Dr Mhkize, the National Minister of Health, conceded the accuracy of the numbers in September 2020.<sup>78</sup> Indeed, Professor Sabir Madhi – a member of the Ministerial Advisory Committee – acknowledged that the number of persons infected by SARS-CoV-2 likely stood somewhere between 15 million and 20 million.<sup>79</sup> It’s a set of tallies closer to the per capita rate of infections in the United States (at least in August 2020) than anyone here might have cared to admit. Worse still, the failure to test – and accurately measure infections – renders it impossible for the government or public health officials to respond both to the pandemic and to other illnesses related directly and indirectly to COVID-19.<sup>80</sup>

The failure of the government to test accurately, to provide a more precise model of the transmission of the disease and to account for related illnesses will haunt the South African state and society for some time, especially given the apparent long-term neurological,

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<sup>76</sup> M Scudellari ‘How the Pandemic Might Play Out in 2021 and Beyond: This Coronavirus Is Here for the Long Haul’ (2020) 584 *Nature* 22, accessed at <https://www.nature.com/articles/d41586-020-02278-5>. See also K Cowan ‘Covid-19 Projections Show 12 to 13 million Infections by November’ *News24* (21 May 2020), accessed at <https://www.news24.com/news24/southafrica/news/breaking-projections-for-covid-19-show-12-to-13-million-cases-by-november-peak-of-1-million-in-august-20200521>.

<sup>77</sup> ‘Discovery Data Points to a Worrying and Potentially Deadly Trend in South Africa’ *BusinessTech* (9 September 2020), accessed at <https://businesstech.co.za/news/lifestyle/432762/discovery-data-points-to-a-worrying-and-potentially-deadly-trend-in-south-africa/>. Dr Francois Venter of the University of the Witwatersrand confirmed the accuracy of these numbers. (Email Correspondence, on file with author.)

<sup>78</sup> G Imray ‘South Africa Says 12 Million “Probably” Had Coronavirus’ *Associated Press* (16 September 2020), accessed at <https://apnews.com/article/virus-outbreak-health-cape-town-africa-south-africa-cffd4dfb1e3cbd810838fb9bde7a91d>.

<sup>79</sup> E Ellis ‘Covid-19 May Have Already Infected 20 million in South Africa, says Prof Madhi’ *Daily Maverick* (14 September 2020), accessed at <https://www.dailymaverick.co.za/article/2020-09-14-covid-19-may-have-already-infected-20-million-in-south-africa-says-prof-madhi/>.

<sup>80</sup> S Woolf et al. ‘Excess Deaths From COVID-19 and Other Causes, March-July 2020’ (2020) 324 *Journal of the American Medical Association* 1562 (12 October 2020), accessed at <https://doi.org/10.1001/jama.2020.19545>:

Between March 1 and August 1, 2020, 1 336 561 deaths occurred in the US, a 20% increase over expected deaths (1 111 031) ... Of the 225 530 excess deaths, 150 541 (67%) were attributed to COVID-19. Although total US death counts are remarkably consistent from year to year, US deaths increased by 20% during March-July 2020. COVID-19 was a documented cause of only 67% of these excess deaths ... US deaths attributed to some noninfectious causes increased during COVID-19 surges. Excess deaths attributed to causes other than COVID-19 could reflect deaths from unrecognized or undocumented infection with severe acute respiratory syndrome coronavirus 2 or deaths among uninfected patients resulting from disruptions produced by the pandemic.

pulmonary, cardiac and gastrointestinal effects of the infection.<sup>81</sup> Indeed, severe cases of SARS-CoV-2 infection have been identified with the creation of autoantibodies associated with such autoimmune disorders as lupus and rheumatoid arthritis – and raised genuine concerns regarding the long-term effects of patients suffering from ‘Long Covid’.<sup>82</sup> The failure to be honest with the South African people left the country unprepared for the next wave. In October 2020, the Gauteng Department of Health and the Western Cape Department of Health revealed significant increases in cases and announced the likelihood of a second wave.<sup>83</sup> The implosion of Nelson Mandela Bay in November 2020 – and the subsequent concession by the Minister of Health that a second wave had taken root in November and December 2020 speaks for itself.

Moreover, Dr Pulliam was not alone in casting doubt on the models employed by the government. Seán Mfundza Muller eviscerated ‘the official numbers’ rather early on, even as the government patted itself on the back for its performance:

When President Cyril Ramaphosa announced the decision to implement an initial 21-day national lockdown in response to the threat posed by the COVID-19 pandemic, he referred to ‘modelling’ on which the decision was based. A media report a few days later based on leaked information claimed that the government had been told that ‘a slow and inadequate response by government to the outbreak could result in anywhere between 87,900 and 351,000 deaths’. These estimates, the report said, were based on, respectively, population infection rates of 10% to 40%. In late April, the chair of the health minister’s advisory committee sub-committee on public health referred to the early models used by the government as *back-of-the-envelope calculations*, saying they were ‘flawed and illogical and made wild assumptions’. These assertions have been impossible to fully assess ... *because no official information on the modelling has ever been released* – despite its apparently critical role ... [and] no details were given on

<sup>81</sup> ‘Living with Covid19: A Dynamic Review of the Evidence around Ongoing Covid-19 Symptoms (Often Called Long Covid)’ *The Medical Review* (15 October 2020), accessed at [https://doi.org/10.3310/themedreview\\_41169](https://doi.org/10.3310/themedreview_41169) and <https://evidence.nihr.ac.uk/themedreview/living-with-covid19/>: ‘Long Covid’ symptoms can last for months. Disorders in brain, lungs, heart, gut, liver and skin often persist.

<sup>82</sup> M Woodruff, R Ramonell, F Lee & I Sanz ‘Broadly-Targeted Autoreactivity is Common in Severe SARS-Cov-2 Infection’ (2020) *medRxiv* (21 October 2020), accessed at <https://doi.org/10.1101/2020.10.21.20216192>: ‘Severe SARS-CoV-2 infection is linked to the presence of autoantibodies against multiple targets ... raising the possibility of de novo autoreactive antibody production during the antiviral response [and] ... a common feature of severe COVID-19.’

<sup>83</sup> V Mokhoali ‘Gauteng May Yet See Second Wave of Covid-19 Infections’ *Eyewitness News* (1 October 2020), accessed at <https://ewn.co.za/2020/10/01/gauteng-may-yet-see-second-wave-of-covid-19-infections>. S Payne ‘Western Cape Premier Alan Winde Calls for Caution as Covid-19 Cases Spike in Garden Route Area’ *Daily Maverick* (5 November 2020), accessed at <https://www.dailymaverick.co.za/article/2020-11-05-western-cape-premier-alan-winde-calls-for-caution-as-covid-19-cases-spike-in-garden-route-area>. The Scientists Collective ‘Anticipating a ‘Second Wave’ – and When and How South Africa Should Try to Prevent or Mitigate’ *Daily Maverick* (22 October 2020), accessed at <https://www.dailymaverick.co.za/article/2020-10-22-anticipating-a-second-wave-and-when-and-how-south-africa-should-try-to-prevent-or-mitigate-it/>. The collective writes: ‘It is imperative that knowledge of transmission and exposure patterns relating to SARS-CoV-2 in SA’s own setting must inform a calibrated and transparent response, not least because the most important component of the response is willing and voluntary compliance with mitigation measures by the public.’ But the scientific collective identifies South Africa’s two biggest problems – (a) an inability to test and trace in order to determine transmission patterns; and (b) a flat out failure to by state and society to promote voluntary compliance such as mask wearing or social distancing mitigation efforts, or to require, by law, mandatory compliance to stem transmission. That’s why South Africa’s infection rate may well stand at roughly 15 million or more after a second wave that began in October 2020.

expected infections, hospital admissions or deaths. A spokesperson for the presidency said that government was withholding such numbers ‘to avoid panic’. Finally, towards the end of May the health minister ... started releasing details of the models and projections ... [M]odels ... are almost always wrong to some degree. What matters for decision-making is that they are ‘right enough’. In the current situation, the difference between predicting 35,000 and 40,000 deaths probably won’t change policy decisions, but 5,000 or 500,000 instead of 40,000 might ... [T]he consequence of [the government’s] lack of sophistication in using evidence and expertise may burden an entire generation of South Africans. The government and its advisors have made much of the fact that the lockdown probably delayed the peak of the epidemic. But there is no evidence so far that this was worth the cost – since most of the population is expected to be infected anyway. One key claim is that the lockdown bought the country time to prepare the health system ... By this definition, it has failed dismally ... [We should be concerned] ... that many academics and commentators have praised the success of government’s strategy: ...the Academy of Sciences asserted that ‘strong, science-based governmental leadership has saved many lives, for which South Africa can be thankful’. *This is entirely unsubstantiated* ... It seems that the government and some of its advisors want to have the best of both worlds: they want to use dramatically incorrect predictions by early models to claim success of their interventions. This is misleading and *does not meet the most basic standards by which academics in quantitative disciplines establish causal effects of policy interventions*.<sup>84</sup>

Mr Muller’s analysis was not only correct at the time. It turned out to be prescient with respect to both the exponential explosion in the number of official infections and the actual numbers of infections as of late August 2020 (13 million) and the degree to which mismanagement of the pandemic hobbled South Africa’s ability to engage the second wave of public health and economic crises associated with COVID-19.<sup>85, 86, 87, 88</sup>

<sup>84</sup> S Muller ‘South Africa’s Use of COVID-19 Modelling Has Been Deeply Flawed. Here’s Why’ *The Conversation* (8 June 2020), accessed at <https://theconversation.com/south-africas-use-of-covid-19-modelling-has-been-deeply-flawed-heres-why-140002>. (Emphasis added)

<sup>85</sup> Y Xi & S Yu ‘Beware the Second Wave of COVID-19’ *The Lancet* (8 April 2020), accessed at [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30845-X/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30845-X/fulltext); Jiji ‘Second Wave of COVID-19 Cases Inevitable in Japan, Expert Says’ *Japan Times* (18 May 2020), accessed at <https://www.japantimes.co.jp/news/2020/05/18/national/second-wave-covid-19-cases-inevitable-japan-expert-says/>; J Keekes ‘China Could Be Hit with a Second Wave of the Coronavirus Because of a Lack of Immunity among Residents, Says Senior Medical Adviser’ *Business Insider* (18 May 2020), accessed at <https://www.businessinsider.com/lack-of-immunity-could-lead-second-wave-coronavirus-china-2020-5?IR=T>; D Lewis ‘We Felt We Had Beaten It’: New Zealand’s Race to Eliminate The Coronavirus Again’ *Nature* (14 August 2020), accessed at <https://www.nature.com/articles/d41586-020-02402-5>; C Shepherd & E Zhou ‘China Targets Frozen Goods after Brazilian Chicken Tests Positive’ *Financial Times* (14 August 2020), accessed at <https://www.ft.com/content/3ca489d7-4e89-42bf-b655-c98d5176b214>; C Shepherd & E Zhou ‘China Locks Down Xinjiang to Contain Coronavirus Surge’ *Financial Times* (31 July 2020), accessed at <https://www.ft.com/content/09464ad1-e377-4a2e-9177-dca1be9b1aec>. Remaining largely off the international travel grid and the brief, hard lockdown of five weeks failed to delay South Africa’s first severe wave of infections by even a month.

<sup>86</sup> The reasons for the cycles and waves of transmission in other better resourced countries have become rather obvious to all members of the scientific community. SARS-CoV-2 has proven to be easily transmissible (establishing a foothold in almost 200 nations in less than four months) and rather obdurate when it comes to control. In February 2020, a major study in the *Journal of American Medical Association* concluded that only 1% of cases in Wuhan were asymptomatic. Z Wu & J McGoogan ‘Characteristics of and Important Lessons from the Coronavirus Disease 2019 (COVID-19) Outbreak in China: Summary of a Report of 72 314 Cases from the Chinese Center for Disease Control and Prevention’ (2020) 323(13) *Journal of the*

*Public health and magical thinking*

With respect to South Africa's healthcare sector, Alex van den Heever first notes (as we have already seen) that every strong system of prevention 'focuses on ... test, trace and quarantine ... [t]ogether with physical distancing, health protocols at high-risk communal spaces ... and the occasional targeted lockdown that should suppress the epidemic to manageable levels.'<sup>89</sup> He then notes that South Africa failed at every step of prevention. The next set of steps requires the provision of 'medical treatment for those that do get infected' and 'critical care' for 'the 36% of those who are hospitalized'. Given the absence of adequately trained healthcare personnel, the chances of anyone securing adequate treatment had reached the vanishing point.

The President's concession that South Africa had the same number of dedicated ICU beds in June as it had in March proved equally puzzling.<sup>90</sup> Van den Heever echoes the criticism of the President's former health advisors (dismissed from their roles in September 2020) issued three weeks earlier in the June 2020 edition of *South African Medical Journal*:

The rationale for embarking on a total and highly restrictive lockdown in SA, with partial relaxation recently, included slowing the effective reproductive rate and aspiring to virus containment. However, an efficient testing strategy for COVID-19, inclusive of ability to trace at least 70% of contacts, which is vital to achieve containment, was not in place. Shortcomings of the testing strategy for COVID-19 case identification in SA at the time of the start of

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*American Medical Association* 1239, accessed at <https://doi.org/10.1001/jama.2020.2648>. Given that this number is close to the reported number of cases, and that later studies suggest 60% asymptomatic cases, it does seem clear that Chinese authorities radically discounted the number of actual COVID-19 cases, and the actual breadth of the outbreak.

<sup>87</sup> Less than two months later, new research suggested that upwards of perhaps 60% of cases were asymptomatic at the time of the outbreak. M Zuo 'Coronavirus: China Launches Study of Asymptomatic Cases and Shared Immunity' *South China Morning Press* (April 2020), accessed at <https://www.scmp.com/news/china/society/article/3080058/coronavirus-china-launches-study-asymptomatic-cases-and-shared>. The absence of attention to a study that might place the number of infected persons in China at closer to 200 000 provides the basis for the backlash against China amongst reputable scientists and epidemiologists – and thus other nations. The disinformation campaign hampered China's intentions to use this moment in time to extend its influence, at a point when the United States' inability to control the pandemic and its absence of leadership caused its broader political machinations to dim quite substantially.

<sup>88</sup> Similarly, while only 15 cases of SARS-CoV-2 had been diagnosed as of 1 February 2020 in the United States, epidemiologists have now established that roughly 28 000 persons had already been infected. B Carey & J Ganz 'Hidden Outbreaks Spread Through U.S. Cities Far Earlier Than Americans Knew, Estimates Say' *The New York Times* (23 April 2020), accessed at <https://www.nytimes.com/2020/04/23/us/coronavirus-early-outbreaks-cities.html>. The Northeastern University study shows that:

a hidden explosion of a disease that many still viewed as a remote threat as the city awaited the first signs of spring. Hidden outbreaks were also spreading almost completely undetected in Boston, San Francisco, Chicago and Seattle, long before testing showed that each city had a major problem, according to a model of the spread of the disease by researchers at Northeastern University who shared their results with *The New York Times*. Even in early February – while the world focused on China – the virus was ... spreading in multiple American cities, but also seeding blooms of infection elsewhere in the United States.

<sup>89</sup> A van den Heever 'Improper Planning, Poor Execution: Why We are Facing a Covid-19 Storm' *News24* (3 July 2020), accessed at <https://www.news24.com/news24/columnists/guestcolumn/opinion-improper-planning-poor-execution-why-we-are-facing-a-covid-19-storm-20200702>.

<sup>90</sup> *ibid.*

the level 5 lockdown included restrictive criteria on who to test, and inadequate capacity to test at scale by the National Health Laboratory Service (NHLS) and in the private sector ... The NHLS plan to scale up SARS-CoV-2 molecular-based tests to 36 000 per 24 hours by the end of April 2020 has still not materialised, [by the third week of June] partly owing to lack of preparedness ... If the pandemic is not mitigated, the WHO estimates that deaths from COVID-19 in Sub-Saharan (population 1 078 billion) during 2020 could range from 83 000 to 190 000 ... In SA, testing for TB decreased by 50%, from a weekly average of 49 109 tests during the 7 weeks pre-lockdown to an average of 24 620 during the 5-week level 5 lockdown period, and remained at this rate through level 4 lockdown ... This significant reduction in TB diagnosis is likely to result in delay of initiation of TB treatment and threatens to reverse gains made in reducing the incidence of TB in SA, and lends itself to exacerbating *Mycobacterium tuberculosis* transmission to others. The disruption of TB services represents but a single example of the unintended consequences of an unmeasured approach such as total lockdown to mitigate the consequences of the COVID-19 pandemic. During the Level 5 lockdown, there has been a 22% reduction in average weekly HIV-1 viral load testing ... and a 33% reduction in CD4+ cell count testing ... compared with the pre-lockdown periods ... These decreases suggest possible treatment interruptions, and missed appointments due to patient fear of SARS-CoV-2 infection ... Non-COVID-19 morbidity and mortality could far exceed ... the WHO estimates [that] would occur from COVID-19. We believe that a strategy focused primarily on COVID-19 can no longer be ethically or morally justified, and will have long-lasting health, societal and economic impacts that may reverberate for decades to come.<sup>91</sup>

Van den Heever then asks: if we had forgone the economic losses associated with the Level 5 hard lockdown, and perhaps left the lockdown at Level 1, as epidemiologists, economists and public health officials began to suggest in April 2020, when things really, clearly started to go sideways, what might we have achieved? Van den Heever writes:

[A] lockdown ... devastated the economy [to the tune of] R1.2 trillion (and growing). For that price, we could have bought roughly 400 000 ICU beds. Or, stated differently, around 800 hospitals with 500 ICU beds each. We could also have funded the running costs of roughly 171 million bed days with a normal mix of general and critical care beds ... [or] 469 667 hospital beds over a 12-month period. On the prevention side, we could have purchased 4.1 million tests per day for an entire year.<sup>92</sup>

### *Economics and magical thinking*

Given the above expert assessments and estimates – on stimulus packages and economic fundamentals, on the number of infections and fatalities and (below) on timelines for vaccines and treatment modalities – one must give pause when one considers the merits of employing Pueyo's 'The Hammer and the Dance' in South Africa. The strategy cuts two ways. The lockdown, if enacted early enough *and sustained*, would have prevented the extremely high numbers of infections and deaths in the first wave: 13 million and 40 000. At the same time, such a sustained lockdown caused rather extreme economic hardship

<sup>91</sup> S Madhi, G Gray, N Ismail, A Izu, M Mendelson, N Cassim, W Stevens & F Venter 'On Covid-19: An Editorial' *South African Medical Journal* (published online 19 June 2020), accessed at <https://doi.org/10.7196/SAMJ.2020.v110i8.15055>. See also A Jack & D Dodd 'Pandemic Exposes Looming Superbug Crisis' *Financial Times* (2020), accessed at <https://www.ft.com/content/8a2c51a8-031c-4edf-b54d-e9b5fe5cd43e>? Another concern, especially for those who work with TB, is the overuse of antibiotics and the creation of drug resistant strains.

<sup>92</sup> *ibid.*

from which it will take some time to recover, as well as permanent damage for which there is no resolution. As Maarten Ackermann, Chief Economist at Citadel notes:

[D]epending upon how long the lockdown continues, we could have between 3 and 4 million lose their jobs [and] that will push unemployment ... to 50%. Unfortunately, in our case, some of the damage will be structural. It will be difficult to ... get ... people back into employment. We entered this [pandemic] in a recession and may lose [a significant number] of companies as a result.<sup>93</sup>

Even insiders were unusually blunt about what the numbers have to say. In February 2020, the Finance Minister Tito Mboweni delivered a budget speech in which public expenditure was projected to be R1.95 trillion – roughly 36% of Gross domestic product (GDP). With the announcement of a second recession in two years of rudderless governance and the justifiable downgrade from Moody's, pandemic lockdown led to initial estimates of a 15% contraction in GDP for 2020. By early April, that estimate had doubled to 30%.<sup>94</sup> In late April 2020, Mboweni stated that: 'Virus or no virus, the economy has been growing too slowly for too long.' But the Minister's candid reflections about the economy and the possibility of permanent damage did not end there. After noting the downsides of a depreciating rand he wrote:

Concerns about the sustainability of South Africa's fiscal choices has seen the cost of borrowing in our country increase faster than other emerging economies ... The fiscal weakness was present going into the crisis – in particular, rising debt to GDP levels and the rapid growth in interest costs as a share of total spending, squeezing out spending on other priorities.<sup>95</sup>

Mboweni's subsequent attempt to calm concerned stakeholders during his revised, supplementary 2020 budget speech came with an admission that the debt ratio could reach 83% of GDP by February 2021. Moody's subsequently issued a statement noting the ballooning debt ratio and concluded that the Minister's belief that it could be stabilised by 2023 was unwarranted.<sup>96</sup> The rating agency concluded that 'South Africa's recent history on this score hardly inspires confidence'.<sup>97</sup> Moreover, South Africa does not exist in a vacuum:

<sup>93</sup> M van der Merwe '“SA Can't Pull Itself Up by Its Bootstraps. There Isn't Money”: Why Global Losses Worry Local Experts' *Fin24* (26 May 2020), accessed at <https://www.fin24.com/Economy/South-Africa/sa-cant-pull-itself-up-by-its-bootstraps-there-isnt-money-why-global-losses-worry-local-experts-20200526-2>.

<sup>94</sup> 'Steep Slump in GDP as COVID-19 Takes its Toll on the Economy' *StatsSA* (8 September 2020), accessed at <http://www.statssa.gov.za/?p=13601#:~:text=South%20Africa's%20economy%20suffered%20a,growth%20rate%20of%20E2%80%9151%25>:

South Africa's economy suffered a significant contraction during April, May and June, when the country operated under widespread lockdown restrictions in response to COVID-19. Gross domestic product (GDP) fell by just over 16% between the first and second quarters of 2020, giving an annualised growth rate of -51%.

<sup>95</sup> 'Finance Minister Fleshes Out R800 Billion Stimulus Package' *BusinessTech* (24 April 2020), accessed at [businesstech.co.za/news/finance/392615/](https://businesstech.co.za/news/finance/392615/).

<sup>96</sup> 'Sharp Contraction in GDP and Revenue Leads to Debt Spike; Stabilisation by 2023 Unlikely' *Moody's Ratings* (25 June 2020), accessed at [https://www.moodys.com/credit-ratings/South-Africa-Government-of-credit-rating-686830?stop\\_mobi=yes#](https://www.moodys.com/credit-ratings/South-Africa-Government-of-credit-rating-686830?stop_mobi=yes#).

<sup>97</sup> E Stoddard 'Moody's Casts Doubts on South Africa's Bid to Stabilise Debt' *Daily Maverick* (28 June 2020), accessed at <https://www.dailymaverick.co.za/article/2020-06-28-moodys-casts-doubts-on-south-africas-bid-to-stabilise-debt/>.

The IMF estimates that by the end of [2020] 170 countries – or almost 90% of the world – will have lower per capita income. That’s a reversal from January [2020], when it predicted 160 countries would end the year with bigger economies and positive per capita income growth. It’s now likely that global gross domestic product by the end of 2021 will in many cases still be lower than where it was at the end of 2019.<sup>98</sup>

Candour cannot always pass itself off as credit-worthy behaviour. Magical thinking within the ANC forced the Finance Minister to renege on the *de minimis*, non-austerity conditions required by the IMF Letter of Intent for pandemic and poverty relief in order to pay party members in the civil service.<sup>99</sup> South Africa clapped when its President initially laid out carefully conceived public health and fiscal stimulus plans. (At the same time, Michael Sachs predicted the dire fiscal consequences of failing to deal with the pandemic and its economic consequences back in March 2020 in the very same plan, endorsed by other leading economists and signed off by the government.)<sup>100</sup> Yet the nation seems to be suffering from a form of collective retrograde amnesia regarding President Ramaphosa’s first two years in office – a period characterised primarily by political paralysis and two recessions in as many years. Having been at the wheel while the economy fell off the cliff in early March 2020 and appearing rather briefly on television 18 times between March 2020 and the end of December 2020 can hardly be said to meet any meaningful standard of transparency and accountability. Only when pressed by his own team of experts did the President concede that he had chosen neither to heed their advice nor to adhere to the reflexive, trial and error, data-driven criteria for changing levels of lockdown in line with ‘The Hammer and the Dance.’ As early as the end of May 2020, Ramaphosa indicated that he would follow his own commitments to public health – and vaguely alluded to the

<sup>98</sup> ‘World Economy That Took Elevator Down, Faces Steep Stairs Back Up’ *Bloomberg News* (6 July 2020), accessed at <https://www.bloombergnews.com>.

<sup>99</sup> ‘Mboweni Admits R70 Billion IMF Loan “Could Be Used for Salary Payments” for ANC Cadres’ *Statement Issued by Dr Leon Schreiber MP* (23 Oct 2020), accessed at <https://www.da.org.za/2020/10/mboweni-admits-r70-billion-imf-loan-could-be-used-for-salary-payments-for-anc-cadres>. Responding to a parliamentary question on whether any portion of the \$4.3 billion loan granted to South Africa by the IMF would be used to pay the salaries of public servants, Mboweni conceded that ‘*the loan receipts (or disbursements) will form part of the National Revenue Fund to be used to support existing government programmes, which could include salary payments.*’ By admitting that the IMF loan could be used to pay salaries, Mboweni has reneged on the spending commitments he made in his Letter of Intent to obtain financial support under the IMF’s emergency financing instrument. The Letter of Intent committed government to use IMF emergency assistance to support health and frontline services, solve the balance of payments problems caused by the pandemic, protect the vulnerable, support economic reform, drive job creation and stabilise public debt. Mboweni’s *volte face* reflects the willingness of his fellow high-ranking ANC party officials and Cabinet members to ignore the advice of in-house economists, as well as multinational bodies attempting to provide emergency assistance to South Africans in need. See also ‘Mboweni Agrees to SAA’s R10.5bn Bailout; No Funds for SABC, Post Office and Denel’ *Polity* (28 October 2020), accessed at <https://www.polity.org.za/article/mboweni-agrees-to-saas-r105bn-bailout-no-funds-for-sabc-post-office-and-denel-2020-10-28>: An insolvent South African Airways – with only 1/3rd of its previous fleet – will receive R10.5-billion to fund its business rescue process. This money will simply be diverted from national departments and their entities as well as reductions from local and provincial conditional grants – money that might actually still do some work. This three-card monte decision – dictated by alliance partners – is also inconsistent with Letter of Intent that Mboweni signed with the IMF.

<sup>100</sup> M Sachs ‘Macro-Policy in the Pandemic Fiscal Imperatives and Financial Considerations’ *CDE Webinar: Covid-19 and SA’s Public Finances* (24 April 2020), accessed at <https://www.cde.org.za/wp-content/uploads/2020/04/Michael-Sachs-presentation-slides.pdf>.

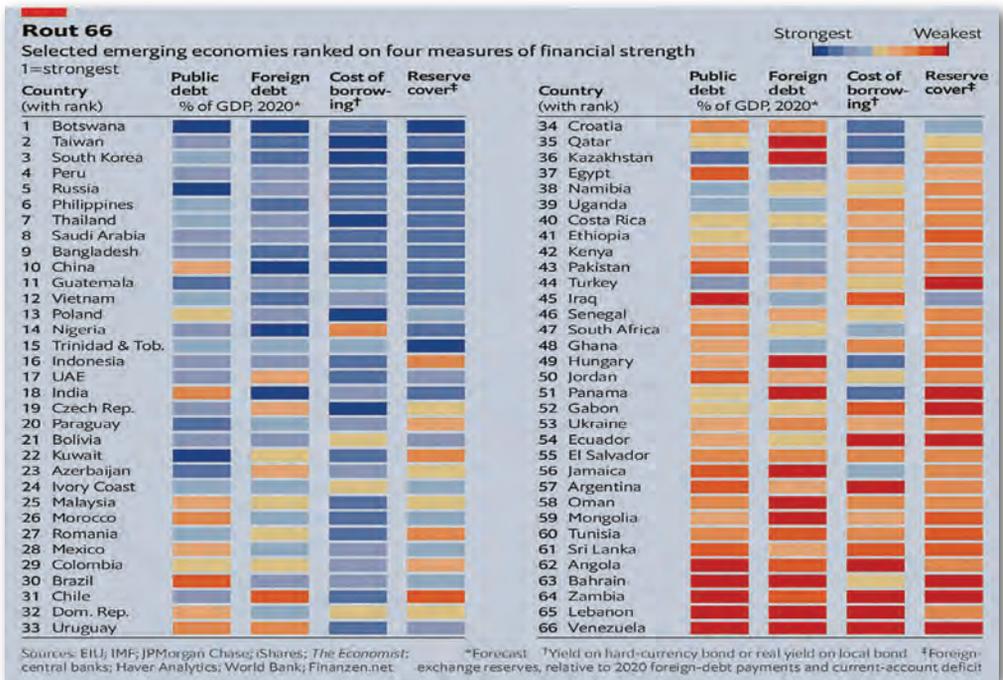
recommendations proffered by the World Health Organization.<sup>101</sup> As of October 2020, with everything back to business as usual, only the NCCC knew why curfews remain in place – or why they were ever important.

Other insiders – such as Business Unity South Africa president Siphon Pityana – were similarly unimpressed by the government’s initial R800 billion proposal:

We have an impressive, well-thought-out and well-articulated response to the health crisis. We don’t have a similarly thought-out response to the economic crisis. Unless we have a credible economic plan, this whole crisis will get deeper and deeper.<sup>102, 103</sup>

Pityana and others expected the lockdown to lead to job losses from anywhere between 3 and 7 million in 2020 (30% of the workforce).

A starker, more accurate analysis by *The Economist* should give readers pause.



**ROUTE 66: SELECTED EMERGING ECONOMIES RANKED ON FOUR MEASURES OF FINANCIAL STRENGTH**

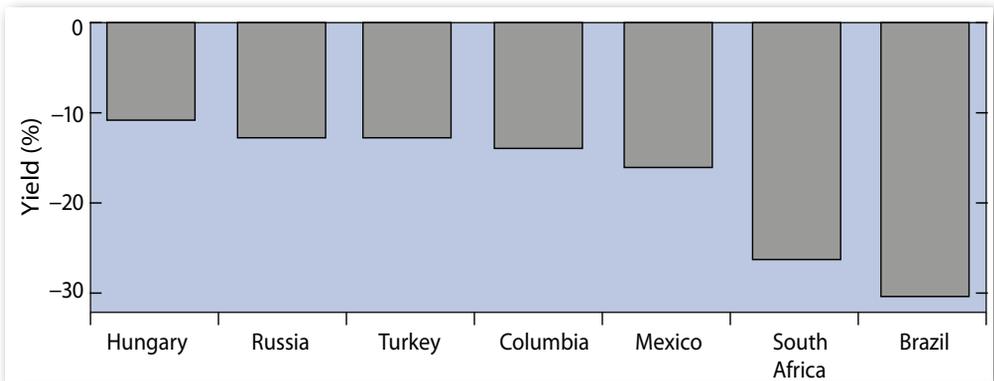
<sup>101</sup> Q Hunter ‘Scientists Advise Cabinet to Go to Level 1, Government Chose Middle Ground’ *News24* (31 May 2020), accessed at <https://www.news24.com/news24/southafrica/news/scientists-advised-cabinet-to-go-to-level-1-govt-chose-middle-ground-ramaphosa-20200531>.

<sup>102</sup> R Mahlaka ‘Ramaphosa Considers R1-Trillion Covid-19 Stimulus Proposal for SA’s Frail Economy’ *Daily Maverick* (19 April 2020), accessed at <https://www.dailymaverick.co.za/article/2020-04-19-ramaphosa-considers-r1-trillion-covid-19-stimulus-proposal-for-sas-frail-economy/>.

<sup>103</sup> A limited condition loan of \$4.3 billion was issued by the IMF on 27 July 2020 – the largest such loan to fight the pandemic. G Okamoto ‘IMF Executive Board Approves US\$4.3 Billion in Emergency Support to South Africa to Address the COVID-19 Pandemic’ *IMF Bulletin* (27 July 2020), accessed at <https://www.imf.org/en/News/Articles/2020/07/27/pr20271-south-africa-imf-executive-board-approves-us-billion-emergency-support-covid-19-pandemic>.

One might look at the list with both wonder and despair. South Africa ranks 47th out of 66 emerging markets.<sup>104</sup> Iraq claims a rank two spots higher at 45. Iraq bears all the hallmarks of a failed state. What exactly holds Iraq together? It remained within Shi'ite Iran's orbit, yet elects governments with a Sunni majority receiving western support. Far worse, it's the site of a number of proxy wars. While the ISIS Caliphate has been territorially defeated, it still hides in crevices and caves, and sometimes out in plain sight in Syria. Today, Kurds battle both Iraqis and Turks for control in the north. In May 2020, before the real damage had been done, South Africa found itself further down the rankings than this broken nation. According to *The Economist*, South Africa is smack dab in the middle of 30 countries considered to be 'in financial distress'. At the bottom, flashing red, is Venezuela – the poster child for everything that 'could go wrong, has gone wrong'.

Press a little harder and the financial news about South Africa got even worse. Investors moved into shorter-end securities after the Reserve Bank cut its rate to a new low. But as Selcuk Gokuluk, explains: 'In dollar terms, however, the bonds have been among the worst performers in emerging markets as the rand's slide to a record low against the dollar in April eroded returns ...' Investors lost about 25% this year in South Africa, the second-worst performance after Brazil, according to the Bloomberg Barclays indexes reflected below.<sup>105</sup>



#### BLOOMBERG BARCLAYS INDEXES

As the rest of this book makes clear, *The Economist's* ranking and ProMeritum's big speculative bet on South African bonds should come as little surprise. The country's claim to the having the world's highest Gini coefficient masks the fact that most of post-apartheid South African society remains abjectly poor and politically disenfranchised. This largely low-income economy rests on a rather insecure bed of support from middle-class and

<sup>104</sup> 'Which Emerging Markets are in Most Financial Peril? Our Ranking of 66 Countries Shows Which Are in Distress, And Which Are Relatively Safe' *The Economist* (1 May 2020), accessed at <https://www.economist.com/briefing/2020/05/02/which-emerging-markets-are-in-most-financial-peril>:

[*The Economist's*] ranking examines 66 economies across four matrices. These [four sources] are public debt, foreign debt (both public and private) and borrowing costs (proxied where possible by the yield on a government's dollar bonds). We also calculate their likely foreign payments this year (their current-account deficit plus their foreign-debt payments) and compare this with their stock of foreign-exchange reserves. A country's rank on each of these indicators is then averaged to determine its overall standing.

<sup>105</sup> S Gokuluk 'Hedge Fund That Never Loses Bets Big on South Africa' *Bloomberg News* (13 May 2020), accessed at <https://www.bloomberg.com/news/articles/2020-05-13/hedge-fund-with-100-annual-record-bets-big-on-s-african-debt>.

upper-middle class families, union working-class remittances, children's grants and pensions. Such a thin mix of social welfare (broadly conceived) makes South Africa especially vulnerable to internal contractions and external shocks: a 50% unemployment rate should have elicited real handwringing.<sup>106</sup> Again, then, it is little wonder that as of September 2020, both international and domestic experts believed that South Africa was headed toward becoming a failed state by 2030.<sup>107</sup>

*Presidential lies, magical thinking, 13 million infected as of 24 August 2020, and its getting worse not better*

It's impossible to know, without further data, and future political commitments, how high infection rates and the death toll will go.<sup>108</sup> (The numbers as of the end of December 2020 remain rather chilling.) While experts in both South Africa and the United States have spoken about peaks in the pandemic, the valleys in each jurisdiction depend in large part on the ability of each country to contain the outbreak – and limit person to person spread.<sup>109</sup> Only the Northeastern states in the United States demonstrated an ability to

<sup>106</sup> S Dhlamini 'Economic Recovery Plan Will Protect Jobs in Vulnerable Sectors – Ramaphosa' *Polity* (19 October 2020), accessed at <https://www.polity.org.za/article/economic-recovery-plan-will-protect-jobs-in-vulnerable-sectors---ramaphosa-2020-10-19/>: 'The Presidential Employment Stimulus announced last week involves a public investment of R100-billion over the next three years.' Will R33-billion per annum really result in a marked change in unemployment? R33-billion per annum?

<sup>107</sup> It's little wonder, then, that President Ramaphosa's most recent act of magical thinking has generated only muted enthusiasm. T Creamer 'Credible Pipeline of Projects Seen as Key to Achieving R1-Trillion Infrastructure Goal' *Polity* (3 November 2020), accessed at <https://www.polity.org.za/article/credible-pipeline-of-projects-seen-as-key-to-achieving-r1-trillion-infrastructure-goal-2020-11-03/>:

President Cyril Ramaphosa has highlighted the importance of project preparation to unlocking the mostly private finance that will be needed to realise government's goal of investing R1-trillion in infrastructure over the coming four years and turning South Africa into a 'building site' ... Ramaphosa said that private sector funding and high-impact capital funding would be secured only if a credible pipeline of 'bankable' projects was developed.

The government has committed R100-billion for the fund for the coming ten years, of which a mere R18 billion will be released over the coming three years. See also M Merten 'Mini-Budget: The State of South Africa's Broke(n)ness' *Daily Maverick* (25 October 2020), accessed at <https://www.dailymaverick.co.za/article/2020-10-25-mini-budget-the-state-of-south-africas-brokenness/>. While the ANC government has committed itself to spending 10s upon 100s of billions of rand to keep unsustainable SOEs such as SAA or Eskom afloat, President Cyril Ramaphosa's Economic Reconstruction and Recovery Plan of 15 October has promised a mere R13.8-billion to somehow create 800 000 new job opportunities by 31 March 2021. Square that circle.

<sup>108</sup> Despite initial concerns, Gauteng Province has not readied 1.5 million new grave sites in response to the pandemic. A Mitchley 'Gauteng is Not Digging 1.5 Million Graves – The Number is the Capacity Available' *News24* (9 July 2020), accessed at <https://www.news24.com/news24/southafrica/news/gauteng-is-not-digging-1-5-million-graves-the-number-is-the-capacity-available-20200709/>; N Reimann 'South Africa Readies 1.5 Million Graves or Coronavirus Mass Burials' *Forbes* (8 July 2020), accessed at <https://www.forbes.com/sites/nicholasreimann/2020/07/08/south-africa-readies-1-5-million-graves-for-coronavirus-mass-burials/?sh=44fa08f145a6>. Don't believe everything that you read.

<sup>109</sup> In a rare admission, US Health Secretary Alex Azar confessed in late June 2020 that the window for controlling COVID-19 had closed. K Manson & P Temple-West "'Window is Closing' to Halt Virus in US, Says Health Secretary' *Financial Times* (29 June 2020), accessed at <https://www.ft.com/content/6eea1032-4ce6-4209-9242-bffbf1e7eb3?desktop>. Of course, the statement reflected a political reality, and not a foregone conclusion. Had the United States – at the federal level and many state levels

remain in an aggressive lockdown until new infections fell below 1%, and hospitalisations and fatalities likewise diminished substantially. They did so through testing, tracing and isolating as well as a commitment to returning to restrictions on gatherings in public spaces at the slightest uptick. Indeed, New York and New Jersey returned to rather broad lockdowns after significant increases in infections and hospitalisations from October 2020 to December 2020. That's leadership. Given that the vast majority of South Africans who live in urban and peri-urban areas cannot practise social distancing at home nor when they employ public transportation on their way to work, it's hard to know what the upper limit on infections will be or when any given wave really plateaus.<sup>110</sup> (Seasonal fluctuations may indeed be a function of greater ventilation in warmer weather. But it's not a good reason to alter adherence to the one tool set at our disposal – the use of masks, social distancing where possible, and proper hygiene.)

For manifold reasons already assayed, the infection rates of South Africa and the United States have not been accurately reflected in the official numbers.<sup>111</sup> As Discovery Health reported in September 2020, South Africa undercounted quite dramatically the infection count and the fatality count. Based upon South African Medical Research Council data and Discovery Health's own datasets:

[U]p to 24 August 2020, estimates indicate that the real Covid-19 death rate could be up to 3.1 times higher than that reported ... Extrapolating from these insights, based on the infection fatality rate at the outset of the epidemic – which has reduced as treatment improved – Discovery Health estimates that approximately 13 million South Africans have been infected. This represents an infection rate of 22%, affecting approximately one quarter of adults in the country. These findings are consistent with the initial results of a seroprevalence survey conducted by the Cape Town Metro, indicating that 37% of pregnant women and 42% of people living with HIV had tested positive for Covid-19 antibodies.<sup>112</sup>

AstraZeneca also turned away roughly 40% of individuals who wished to participate in its vaccination trial in South Africa because they tested seropositive for SARS-CoV-2 in antibody assays. (That's a truly scary – yet hard – number regarding the extremely high infection rate after the first wave in August 2020.) These numbers painted a bleak picture as of August 2020 – an almost 25% infection rate amongst adults.<sup>113</sup> But the numbers from

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– promoted a far more aggressive set of policies (such as those adopted by states in the Northeast) it could have brought COVID-19 down to the same manageable levels experienced in early epicentres such as Italy or New York.

<sup>110</sup> According to World Bank figures, 66.36% of South Africa's total population lived in urban areas as of 2018. 'South Africa – Urban Population (% of total) – 1960–2018 Data' *Trading Economics* (2019), accessed at <https://tradingeconomics.com/south-africa/urban-population-percent-of-total-wb-data.html>. The epidemiological meaning of peak reflects a transmission rate of 1.0 – one infected person infects at least one other person. That rate could plateau for some time – especially given the size and density of South Africa's urban communities and the absence of social distancing practices.

<sup>111</sup> However, the United States' lack of complete centralisation of power has enabled a number of states, individually and collectively, to fill the gap created by a duplicitous federal government.

<sup>112</sup> 'Discovery Data Points to a Worrying and Potentially Deadly Trend in South Africa' *BusinessTech* (9 September 2020), accessed at <https://businesstech.co.za/news/lifestyle/432762/discovery-data-points-to-a-worrying-and-potentially-deadly-trend-in-south-africa/>.

<sup>113</sup> For a variety of reasons, children have not been tested at the same rate as adults. In addition, studies thus far have not had the benefit of testing while students and teachers participate in in-person learning environments (schools). R Viner et al. 'Susceptibility to SARS-CoV-2 Infection Among Children and

various independent sources – from different provincial health departments, to insurance companies to pharmaceutical manufacturers – remain consistent. Moreover, these infection figures were consistent with the previously mentioned epidemiological models that allowed for an upper boundary of 24× the official count when the state fails to test, trace and isolate or misleads the public as to the nature and the danger of transmission. Dr Francois Venter, a leading virologist at Wits University, confirmed the accuracy of the numbers – as far as models can go. (Unfortunately, South Africa stopped testing almost entirely as of August and September 2020 – down to a meagre average of 18 000 a day.<sup>114</sup>)

Civil society has underperformed as well: neither experts nor the media have clearly expatiated upon the state’s distortions. Discovery Health’s analysis also revealed the extent to which fear of COVID-19 has suppressed dramatically the public’s desire to seek basic diagnosis of and treatment for a broad array of diseases that can lead to serious morbidity and death:

- a 42% decrease in wellness tests and broader screening activities leading to fewer diagnoses of chronic conditions;
- a 44% reduction in breast cancer diagnoses and a 51% reduction in mammograms performed (with advanced cancers far more complex to treat and associated with poorer outcomes);
- a 42% decline in diabetes assessments and a 19% decline in diabetes registrations;
- a 51% decline in members registering for treatment for depression; and
- poor management of existing chronic conditions with 30% fewer GP consultations related to chronic care over the Level 5 lockdown period.<sup>115</sup>

How can one account for such systemic failures? Ed Wong offers the following ‘just so’ story as an introduction to a scathing analysis of the response to COVID-19 in the United States that maps directly on to the same systemic failures in South Africa:

Army ants will sometimes walk in circles until they die. The workers navigate by smelling the pheromone trails of workers in front of them, while laying down pheromones for others to follow. If these trails accidentally loop back on themselves, the ants are trapped. They become a thick, swirling vortex of bodies that resembles a hurricane as viewed from space. They march endlessly until they’re felled by exhaustion or dehydration. The ants can sense no picture bigger than what’s immediately ahead. They have no coordinating force to guide them to safety. They are imprisoned by a wall of their own instincts. This phenomenon is called the death spiral.<sup>116</sup>

He then breaks down this *death spiral* response into seven interrelated component parts – as true of South Africa as it is of the United States.

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Adolescents Compared With Adults: A Systematic Review and Meta-analysis’ (2020) *Journal of the American Medical Association: Pediatrics* (published online 25 September 2020), accessed at <https://doi.org/10.1001/jamapediatrics.2020.4573>:

In this meta-analysis, there is preliminary evidence that children and adolescents have lower susceptibility to SARS-CoV-2, with an odds ratio of 0.56 for being an infected contact compared with adults.

There is weak evidence that children and adolescents play a lesser role than adults in transmission of SARS-CoV-2 at a population level.

<sup>114</sup> ‘Daily Coronavirus Reports from the South African Department of Health – September 8 through September 13 2020’ *COVID-19 South African Online Portal* (13 September 2020), accessed at <https://www.sacoronavirus.co.za>.

<sup>115</sup> *ibid.*

<sup>116</sup> E Yong ‘America is Trapped in a Pandemic Cycle’ *The Atlantic* (September 2020), accessed at <https://www.theatlantic.com/health/archive/2020/09/pandemic-intuition-nightmare-spiral-winter/616204/>.

A ‘Serial Monogamy of Solutions’ – a function of abysmal public communication by the state and other reliable institutions (lockdowns, hand-washing, screening, de-densification, ventilation, sanitising, minimal social distancing) – when adopted alone accomplish nothing. ‘It’s like we only have attention for only one thing at a time,’ says Natalie Dean, a biostatistician at the University of Florida.<sup>117</sup> In England, and elsewhere in Europe, a second major wave arose in October 2020 because people had grown weary of following the simplest precautions regarding masks and social distancing.<sup>118</sup> In South Africa, the race from Level 5 to Level 1 (over a mere five months) led to a generalisable failure to follow the rules and take adequate account of the risk of infection or death. As for best prevention practices, as of September 2020, the South African Department of Health still remained focused on hand-washing and sanitisers.<sup>119</sup> Its website failed to mention masks or social distancing, the two most efficacious non-therapeutic responses. Even increasing ventilation would be a bonus. The pandemic has accelerated and reached greater heights by the end of 2020 because the best practices have never been fully adopted. Instead, South Africa has been distracted by debates on such trivial matters as alcohol and tobacco bans.<sup>120</sup>

<sup>117</sup> *ibid.*

<sup>118</sup> C Giles ‘Covid-19 Restrictions Not Affecting Social Distancing, Says ONS – UK Statistics Agency Says Level of People Still Meeting Likely to Lead to Increased Hospitalisations and Deaths’ *The Financial Times* (16 October 2020), accessed at <https://www.ft.com/content/8b7d688d-7153-43f3-9539-56db62bcc8a7?desktop>:

Government restrictions in the coronavirus crisis have not yet led to a significant increase in social distancing by Britons, the UK statistical agency said on Friday, as it reported a 62 per cent increase in the number of Covid-19 infections in England. These trends were likely to lead to continued increases in coronavirus hospitalisations and deaths, said Iain Bell, deputy national statistician at the Office for National Statistics, although a rise in public anxiety about the resurgence of Covid-19 might result in people meeting fewer contacts soon.

<sup>119</sup> ‘Coronavirus Precautions from the South African Department of Health’ *COVID-19 South African Online Portal* (13 September 2020), accessed at <https://www.sacoronavirus.co.za>; G Russell, S Provan, O Ralph & H Dempsey ‘German Confidence Falls While France Gripped by “Critical” Situation’ *Financial Times* (26 October 2020), accessed at <https://www.ft.com/content/7844c8d8-11c8-3a81-85a2-080db273602b>. (The second wave of uncontained infections ripped through Europe during the months of September, October and November.) D Thomas & S Morris ‘City of London Suffers Crushing Blow from Second Lockdown’ *Financial Times* (6 November 2020), accessed at <https://www.ft.com/content/43a35b24-2918-451f-a9ca-90d676342981?>; ‘Merkel Likens the Pandemic to the Challenges Germany Faced after World War II as a New Lockdown Begins’ *The New York Times* (2 November 2020), accessed at <https://www.nytimes.com/live/2020/11/02/world/covid-19-coronavirus-updates#> (‘Freedom is the possibility to decide from various options, but freedom is also freedom for everyone,’ Ms. Merkel said. ‘That means, I don’t have endless freedom and everyone else has to live with my version of freedom.’); P Wise ‘Portugal Imposes State of Emergency’ *Financial Times* (9 November 2020), accessed at <https://www.ft.com/content/f52fbc31-1858-3def-821d-d1456087b4e8> (‘A state of emergency imposing night-time and weekend curfews came into force in Portugal on Monday as coronavirus infection rates reached record levels and doctors warned of mounting pressure on intensive care beds. The 15-day measure ... gives the government special powers to enforce travel restrictions, business closures and other controls to contain the pandemic.’); V Hopkins ‘Hungary to Close Schools in One of Europe’s Strictest Lockdowns’ *Financial Times* (9 November 2020), accessed at <https://www.ft.com/content/f52fbc31-1858-3def-821d-d1456087b4e8>: ‘Hungary will close schools and universities as it imposes a curfew, going further than many European peers to stem rising Covid-19 infections after weeks of criticism that the government had not taken robust action soon enough.’

<sup>120</sup> The externalities of alcohol abuse in South Africa have been well documented. R Matzopoulos, S Truen, B Bowman & J Corrigan ‘The Cost of Harmful Alcohol Use in South Africa’ (2014) 104 *South African Medical Journal* 127, accessed at <https://doi.org/10.7196/samj.7644>; S Woolman & C Sprague ‘Nowhere to Run, Nowhere to Hide: The Absence of Public Policy on Intimate Partner Violence Abrogates the

The problem of ‘false dichotomies’ – mild symptoms versus death – glosses over the large number of persons who ‘recover’ but who have long-lasting symptoms and permanent damage to a variety of different organs and structures. South Africa’s Department of Health COVID-19 website states: ‘Don’t Panic’ and then ‘82% cases are mild’. That missing 18% is one big matzah ball. In addition, the virus is not just a pulmonary disorder despite its name. It attacks the heart, the gastrointestinal tract, the skin and the entire neurological system. Indeed, the number of persons who experience altered mental states suggests the potential for long-term neurological problems, including Alzheimer’s disease. More importantly, as most serious public health experts quickly became aware, South Africa never truly grappled with a choice between saving the economy or the saving of lives.<sup>121</sup>

Epidemiologists and economists largely agree that the economy cannot rebound while the pandemic is still raging. By treating the two as opposites, state leaders rushed to reopen, leading a barely contained virus to surge.<sup>122</sup>

As 100-year-old evidence from the Spanish Flu pandemic clearly indicates, those cities and states that locked down quickly, maintained strict stay-in-place orders and enforced best practice in terms of social distancing and hygiene stemmed the spread of influenza, and then went on to have the quickest and the most robust economic recoveries. New Zealand – having eliminated the virus twice – is a good example, even if its geographical isolation (and wealth) makes it something of an outlier. Their *cri de coeur* – ‘go hard, go early’ – has enabled them to open up their economy fully and protect the short-term and long-term wellbeing of the public.<sup>123</sup>

South Africa, like the United States, was both subject to and receptive to ‘the comfort of theatre’:

Stay-at-home orders saved lives by curtailing COVID-19’s spread, and by giving hospitals some breathing room. But the orders were also meant to buy time for the nation to ramp up its public-health defenses.<sup>124</sup>

As already noted, South Africa has never ramped up. Moreover, South Africans are still told to wash their hands or use sanitiser – despite the fact that transmission takes place primarily through aerosol emission (often of tiny droplets that can remain in the air for very long periods of time). The lack of mask usage remains unnerving. Reopened public schools are generally staggering classes but will still pack 40 children in a room. Many of the same children take packed public transport to schools. Yet the signs outside school bathrooms state that only one student at a time should use the facilities.

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Rights to Health and Bodily Integrity Under the South African Constitution’ (2015) 22 *Cardozo Journal Of Law & Gender* 29, accessed at [https://www.researchgate.net/publication/292608218\\_Nowhere\\_to\\_Run\\_Nowhere\\_to\\_Hide\\_The\\_Absence\\_of\\_Public\\_Policy\\_on\\_Intimate\\_Partner\\_Violence\\_Abrogates\\_the\\_Rights\\_to\\_Health\\_and\\_Bodily\\_Integrity\\_Under\\_the\\_South\\_African\\_Constitution](https://www.researchgate.net/publication/292608218_Nowhere_to_Run_Nowhere_to_Hide_The_Absence_of_Public_Policy_on_Intimate_Partner_Violence_Abrogates_the_Rights_to_Health_and_Bodily_Integrity_Under_the_South_African_Constitution).

<sup>121</sup> E Yong ‘America is Trapped in a Pandemic Cycle’ *The Atlantic* (September 2020), accessed at <https://www.theatlantic.com/health/archive/2020/09/pandemic-intuition-nightmare-spiral-winter/616204/>.

<sup>122</sup> *ibid.*

<sup>123</sup> ‘New Zealand’s ‘Go Hard, Go Early’ Strategy Seems to Have Worked’ *The New York Times* (7 October 2020), accessed at <https://www.nytimes.com/live/2020/10/07/world/covid-coronavirus>.

<sup>124</sup> *ibid.*

Showiness is often mistaken for effectiveness. The coronavirus mostly spreads through air rather than contaminated surfaces, but many businesses are nonetheless trying to scrub and bleach their way toward reopening.<sup>125</sup>

Temperature checks – at airports and schools – substitute for testing.<sup>126</sup> That’s an especially embarrassing form of theatre when our actual body temperatures have long been known to be one degree below norms created in the mid-19th century. There’s no supply of effective measures – such as masks for all students – because South Africa, as Alex van den Heever showed, had already pissed the money for them away.<sup>127</sup> As Mark Heywood’s investigations demonstrated, the state has spent billions of rand on large, unnecessary ICU field hospitals – still left incomplete – when it could have used the same money for testing and effective social distancing measures.<sup>128</sup> More theatre.

With respect to ‘personal blame versus systemic fixes’, it has proven easy to have individuals pulled over by police for breaking a curfew, or some persons shamed for failing to abide by legal sanctions or institutional guidelines. But after accounting for large-scale failures to deliver food or relief grants or to develop a sustainable basic income scheme or an improved public transport system (forget about adequate housing), all that has been left in public discourse is moralising praise or blame. The President’s irregular homilies either thank us ‘for behaving in the spirit of ubuntu’ or offer a stern rebuke to those persons who fail to take care of others. (Kinda rich, on both accounts.)

‘The normality trap’ has been especially powerful: ‘[I]n times of uncertainty and upheaval, “people crave a return to familiar, predictable rhythms,” says Monica Schoch-Spana, a medical anthropologist at the Johns Hopkins Center for Health Security.’<sup>129</sup> Given the invisibility of the virus, and the month by month move from Lockdown Level 5 to virtually no restrictions at Level 1, people in many parts of South Africa are partying like its 1999. Government officials who regularly dissemble about the infection rate or the number of fatalities have made it *impossible* for people to believe that things are far, far worse than they have been told.<sup>130</sup>

As for ‘magical thinking’, well this Prologue has covered that terrain already in gory detail – from all the false hypotheses offered as to why South Africa would escape a high infection rate to institutional failures across the state when it came to public health and

<sup>125</sup> *ibid.*

<sup>126</sup> T Chetty et al. ‘A Rapid Review of the Effectiveness of Screening Practices at Airports, Land Borders and Ports to Reduce the Transmission of Respiratory Infectious Diseases such as COVID-19’ (2020) *South African Medical Journal* (October 2020), accessed at <http://www.samj.org.za/index.php/samj/article/view/13114>. Temperature screening is theatre:

[S]tudies found that entry-based travel screening would achieve only modest delays in community transmission, while international travel quarantine could reduce case importations by 80% [and thus] insufficient evidence to support entry and exit screening at points of entry.

<sup>127</sup> *ibid.*

<sup>128</sup> M Heywood ‘Big Questions Loom over Gauteng’s Billion-Rand ICU Field Hospitals’ *Daily Maverick* (25 September 2020), accessed at <https://www.dailymaverick.co.za/article/2020-09-25-big-questions-loom-over-gautengs-billion-rand-field-icu-hospitals/>.

<sup>129</sup> *ibid.*

<sup>130</sup> African Press ‘City of Cape Town Concerned Residents “Too Relaxed” Amid Pandemic’ *Polity* (6 October 2020), accessed at <https://www.polity.org.za/article/city-of-cape-town-concerned-residents-too-relaxed-amid-pandemic-2020-10-06>: ‘The City of Cape Town has raised concerns as its health department reported an increase in incidents of non-compliance to Covid-19 protocols by residents.’

economic interventions. Aside from an initial hard lockdown of five weeks, state and society have used magical thinking to escape the long-term harm associated with a virus that will take years to control (assuming we can cabin its mutating form).

‘The Complacency of Inexperience’ reflects not just an absence of familiarity with a pandemic, but the apparent normalness of life without serious disease or disruption. Why should I care or do anything differently? The absence of fear, the self-congratulatory behaviour of the state and a general scepticism about modern science makes it difficult to comprehend the widespread nature of the disease. As Stalin acidly remarked: ‘One death is a tragedy; one million is statistic.’

As for our related ‘reactive rut,’ the words of Mike Ryan at the World Health Organization in March 2020 should be recalled: ‘Be fast, have no regrets ... The virus will always get you if you don’t move quickly.’ South Africa seemed to move fast with its late March lockdown. But that, again, was it. Why?

[It’s] partly because exponential growth is counterintuitive, so ‘we don’t understand that things look fine until right before they’re very not fine,’ says Beth Redbird, a sociologist at Northwestern. It’s also because the coronavirus spreads quickly but is slow to reveal itself: It can take a month for infections to lead to symptoms, for symptoms to warrant tests and hospitalizations, and for enough sick people to produce a noticeable spike. Pandemic data are like the light of distant stars, recording past events instead of present ones. This lag separates actions from their consequences by enough time to break our intuition for cause and effect.<sup>131</sup>

Well, save for epidemiologists like Juliet Pulliam or Seán Muller – and some of our finest physicians – South Africa writ large has failed to follow the science and the most basic tenets of cause and effect.

The bad news for South Africa and the United States is quite obvious: the endogenous public health failures in response to a panoply of exogenous obstacles means that this global pandemic will take a number of years to bring under control. The economic damage could take even longer to fix, or may be permanent.<sup>132</sup> However, a meaningful fix will only be possible if collective action reverses each nation’s current course of action within the immediate future.

How do we/I know that the abject failure to protect and to care for the countries’ respective citizens falls at the feet of their political masters? We can make such an assessment not only by comparison with other countries – but within the two countries as well. The Governors of New York (Andrew Cuomo) and New Jersey (Phil Murphy) faced some of the worst COVID-19 outbreaks and outcomes in the world from March 2020 through July 2020. However, they managed to keep a hard lockdown in place for over four months, ensured that ICU beds remained open, available and competently staffed, and finally

<sup>131</sup> *ibid.*

<sup>132</sup> ‘Covid-19 Peak Expected Late August, with SA Economy to Recover in 2 years’ *Polity* (28 July 2020), accessed at <https://www.polity.org.za/article/covid-19-peak-expected-late-august-with-sa-economy-to-recover-in-2-years-2020-07-28>:

The head of B4SA’s economic working group, Martin Kingston, said the organisation expected the infection rate to have ‘a long tail-off’ and for the virus to remain a reality of daily life for ... two more years. ‘Against our latest modelling scenarios, we expect that it will take *a minimum of two years for the South African economy* to recover to pre-Covid-19 levels, keeping in mind that South Africa’s economy was already weak at the start of 2020,’ said Kingston.

Of course, Kingston’s models depend on an end to the pandemic – and there’s no sign of it abating any time soon.

reached the bottom of the curve by the end of June 2020. New York City – following stringent stay-in-place orders – recorded zero deaths on 13 July 2020.<sup>133</sup> New York State maintained an infection rate of less than 1% through September 2020 through aggressive testing, tracing, isolation and social distancing measures. And, as noted above, the state not only remained ready to reinstitute restrictions if the transmission rate (*R*-value) went meaningfully above one, New York did so in October 2020 and shut down a significant number of social and economic activities in December 2020, as the infection rate rose in New York and the infection and fatality rate throughout the United States spiralled out of control. By the end of December 2020, the United States had recorded over 350 000 dead as Thanksgiving and Christmas travel made this pandemic evermore difficult to control.

By comparison to New York and New Jersey, 38 other US states with lax controls from the outset saw their numbers surge (almost exponentially) through the summer months of June, July and August 2020. In November 2020, the United States began to record daily numbers above 130 000 – and by the end of December 2020, the number has risen to 250 000 infections per day. This seemingly endless surge put paid to the nostrum that the summer heat and humidity would kill the virus or dampen its transmission (or one of President Trump’s more outlandish lies that the virus would, ‘somehow, just disappear’<sup>134</sup>).

It took a significant reversal in President Trump’s political fortunes to prompt the White House to acknowledge the southern and western summer surge and to issue a somewhat clearer (though non-binding) set of directives to these states to consider a return to lockdowns (to which they had never fully committed.) True to form, the failure of the Trump White House to maintain its informal commitment to stricter restrictions for more than a few days allowed the pandemic to continue its march throughout the country and overwhelm woefully underfunded public healthcare systems in both high density cities and sparsely populated states throughout the South, the Midwest and the Northwest.

Worse still, Bob Woodward’s public dissemination of the audio recordings of 18 interviews with President Trump for Woodward’s book – *Rage* – made it patently obvious that Trump understood, without a scintilla of doubt, the deadliness of SARS-CoV-2 in early February 2020 and repeatedly failed to act on this knowledge.<sup>135, 136</sup> Trump continued to dissemble and engage in mass gaslighting even after contracting the virus himself in late September 2020. As John Barry explained in late August 2020:

Bad as the virus has been this summer, it actually spreads better in low temperatures, and when temperatures fall, more people will be inside in poorly ventilated areas where transmission is also more likely. If the US goes into the fall with new daily cases in the tens of thousands,

<sup>133</sup> L Wamsley ‘NYC Has its First Day in Months with No COVID-19 Deaths’ *National Public Radio* (13 July 2020), accessed at <https://www.npr.org/sections/coronavirus-live-pdates/2020/07/13/890427225/>.

<sup>134</sup> S Abramsky ‘As Infection Rates Soar, Trump Says Virus Could Just ‘Disappear’ *The Nation* (3 July 2020), accessed at <https://www.thenation.com/article/politics/trump-coronavirus-infection-rates/>.

<sup>135</sup> B Woodward *Rage* (2020).

<sup>136</sup> M Harrison, K Biliouris, Z Zeng & C Meehan ‘COVID-19: Revisiting Our 2nd Wave Simulations and Back to Work Trajectory’ *Morgan Stanley Biotechnology Report* (23 July 2020), accessed at <https://advisor.morganstanley.com/the-irvin-and-bevack-group/documents/field/i/ir/irvin-and-bevack-group/COVID-19%20Revisiting%20Our%202nd%20Wave%20Simulations%20and%20Back%20to%20Work%20Trajectory%207%2023%2020.pdf>. ‘150,000 daily new cases are possible without better control of the virus.’

as they are now, then the numbers could explode and the Morgan Stanley prediction could come true. Considering our containment efforts to date, there is little reason for optimism.<sup>137</sup>

Similarly, the abject poverty of the South's Africa response can be attributed to President Ramaphosa and the government's mismanagement of the pandemic, the party's ongoing problems with corruption (as manifest by relief items 'falling off the back of trucks' and into the yards of officials) and the institutional failure of critical organs of state – beyond the Auditor-General, SARS and the Reserve Bank.<sup>138</sup> While President Ramaphosa could have addressed the basic factual predicates regarding the pandemic, and the justifications for the public health and economic responses to the damage wrought, his public briefings have been short on facts regarding the decisions that 'his' experts and government officials have taken. These occasional 'updates' did not concede how much more difficult daily life would become for the 50% of society who live at or below the food poverty line of line of \$5/day.

### *South Africa's Death Spiral*

At the end of December 2020, the abject failure of the President and his government to respond to the COVID-19 pandemic, along with clear signs of a 'frantic cover-up',<sup>139</sup> became clear to the entire world and subsequently to a South African body politic that had had every reason to believe everything was normal and under control. In fact, they had been led by their President into an 11-month death spiral.<sup>140</sup>

President Ramaphosa's intermittent communication during this period of distress has not only lacked the transparency and accountability expected of government officials operating under the rule of law: these briefings failed to acknowledge how much more difficult life would become for South African society – now and into the future. While I've

<sup>137</sup> J Barry 'A Warning for the United States from the Author of "The Great Influenza" – If We Don't Get the Virus Under Control, the Devastation Will Get Worse' *The New York Times* (18 August 2020), accessed at <https://www.nytimes.com/2020/08/18/opinion/coronavirus-economy.html>?; J Barry *The Great Influenza: The Story of the Deadliest Pandemic in History* (2004).

<sup>138</sup> 'Dead Businessman Scores PPE Contract in Eastern Cape' *News24* (22 August 2020), accessed at <https://www.News24.Com/Dead-Business-Man-Scores-Ppe-Contract-In-Eastern-Cape-Report-20200822>. Others – seemingly out of touch with NCCC's concentration of power and decision-making by fiat – credited the government's 'democratic' engagement with the public prior to the exponential explosion of cases beginning in late June. D Kotze 'What Ramaphosa's COVID-19 Decisions Say about South Africa's Democracy' *The Conversation* (16 June 2020), accessed at <https://theconversation.com/what-ramaphosas-covid-19-decisions-say-about-south-africas-democracy-140186>:

Government insisted that its actions were informed by scientific advice. But some of the health scientists advising it publicly challenged it. This indicates how decision-making changed over time. The scientists' perceived marginalisation led them to claim that the new regulations were 'unscientific'. But changes in the government's decision-making requirements changed from public healthcare science to scientific modelling of the pandemic's future scenarios.

<sup>139</sup> A Dasoo, G Gray, G Richards, M Mendelson, F Abdullah, F Venter, J McIntyre, A Wulfsohn & A van den Heever 'Vaccines for South Africa. Now' *Daily Maverick* (2 January 2021), accessed at <https://www.dailymaverick.co.za/article/2021-01-02-vaccines-for-south-africa-now/>. A handful of South Africa's best scientists found the necessary conviction to identify the government's failure to secure access to a vaccine and to communicate transparently about COVID-19.

<sup>140</sup> S Fink 'As Virus Resurges in Africa, Doctors Fear the Worst Is Yet to Come' *The New York Times* (26 December 2020), accessed at <https://www.nytimes.com/2020/12/26/world/africa/africa-coronavirus-pandemic.html?searchResultPosition=2>.

never been a believer in ‘great leaders’, ‘profiles in courage’ or even ‘firm organisational stewardship’ – so often packaged and sold by schools of governance and business to their students – on few prior occasions in my life has the difference between genuine leadership and its absence been so stark.<sup>141</sup>

Much as former President Jacob Zuma can never disown the corruption that led to the building of Nkandla, President Ramaphosa and his government cannot disown the acts and omissions that have left more than 20 million South Africans infected with SARS-CoV-2 as well as an unaccounted for number of dead.<sup>142</sup> As one journalist noted:

All 54 African countries put together have registered fewer Covid deaths than France. That doesn't mean people aren't dying from the virus.<sup>143</sup>

Indeed, President Ramaphosa's denialism echoes the egregious falsehoods pawned off as knowledge by President Mbeki during the AIDS pandemic 20 years ago. That Mbeki has never been held truly accountable for the deaths on his hands only bespeaks a system of government – and a civil society – too weak to ensure that politicians are held culpable for their criminal behaviour.

Here then are the stops along the way during our 11-month road to nowhere.

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<sup>141</sup> As noted above, New York Governor Andrew Cuomo provided his constituents with daily hour-long briefings – rich with facts, the rationale for decisions, specifics on COVID-19 epidemiology, infection levels and forecasts, the state of the healthcare system, and practical guidelines for keeping oneself and others safe. Beyond offering clear, consistent and directive communication, Cuomo has also been decisive. He extended stay-in-place for four straight months until New York reached  $T < 1$ , and then reimplemented them locally and then across the state when cases spiked. His detailed, responsive and firm decision-making may have been unpopular with some. However, real leadership manifests itself when it addresses the hard realities on the ground and inspires both faith and courage. C Gallo ‘Finding the Right Words in a Crisis’ *Harvard Business Review* (17 April 2020), accessed at <https://hbr.org/2020/04/finding-the-right-words-in-a-crisis>; C Gallo ‘Five Crisis Communication Lessons From Andrew Cuomo's 111 Days of Coronavirus Briefings’ *Forbes* (18 October 2020), accessed at <https://www.forbes.com/sites/carminegallo/2020/10/18/five-crisis-communication-lessons-from-andrew-cuomos-111-days-of-coronavirus-briefings/?sh=131bdfbf8cf4>. Similarly, New Zealand's Prime Minister Jacinda Arden has been credited with delivering meaningful daily briefings during which ‘[s]he doesn't peddle in misinformation; she doesn't blame-shift; she tries to manage everyone's expectations at the same time [as] she offers reassuring notes.’ U Friedman ‘New Zealand's Prime Minister May Be the Most Effective Leader on the Planet’ *The Atlantic* (19 April 2020), accessed at <https://www.theatlantic.com/politics/archive/2020/04/jacinda-ardern-new-zealand-leadership-coronavirus/610237/>. Arden has repeatedly been held up as an exemplary leader in a time of crisis. Key leadership practices observed include ‘... the government's willingness to themselves be led by expertise, its efforts to mobilise the population, and to enable coping, all of which serve to build the trust in leadership needed for transformative, collective action such as the pandemic demands.’ S Wilson ‘Pandemic Leadership: Lessons from New Zealand's Approach to COVID-19’ (2020) 16 *Leadership* 279, accessed at <https://journals.sagepub.com/doi/pdf/10.1177/1742715020929151>. It goes without saying that the narcissistic and sociopathic strategies employed by leaders such as a President Trump or a President Bolsonaro are only partially offered as points of comparison. It must be said that President Ramaphosa's government preferred power over truth.

<sup>142</sup> E Ellis ‘Covid-19 may have already infected 20 million in South Africa, says Prof Madhi’ *Daily Maverick* (14 September 2020), accessed at <https://www.dailymaverick.co.za/article/2020-09-14-covid-19-may-have-already-infected-20-million-in-south-africa-says-prof-madhi/>.

<sup>143</sup> R Maclean ‘A Continent Where the Dead Are Not Counted’ *The New York Times* (2 January 2021), accessed at <https://www.nytimes.com/2021/01/02/world/africa/africa-coronavirus-deaths-underreporting.html>.

By 30 January 2020, given that the WHO had already declared that the virus constituted a Public Health Emergency of International Concern (PHEIC), President Cyril Ramaphosa and his government knew that the world, to which South Africa is inextricably linked, now had to fight a highly transmissible virus.<sup>144</sup> By the end of January 2020, confirmed cases of SARS-CoV-2 had been found in 22 countries. Although China had implemented (belatedly) stringent travel restrictions and quarantines across its own cities in an effort to stem the tide, the seeding of the virus across the globe had long begun.<sup>145, 146</sup> But this warning, this clarion call, brought with it no tangible action on the part of the President or the South African government.

In February 2020, South Africa continued to report no confirmed cases of COVID-19. The seeding by trade with China and tourists in the Western Cape had surely started. *The Lancet* published an epidemiological (modelling) study that placed South Africa, Egypt and Algeria at the greatest risk of significant exposure (on this continent) to SARS-CoV-2, given high trade and travel volumes with China.<sup>147</sup> The article further identified the need for urgent prioritisation of increased resources, surveillance and capacity building to support case detection and reduce transmission. The African Union and the Africa CDC called on member states to enhance surveillance measures, screen travellers from China, activate their emergency response systems, and provide guidance to the public.<sup>148</sup> At the same time, South Africa's readiness in the event of infections had been called into question (including such specifics on quarantines generally, and measures in place for a plane full of South

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<sup>144</sup> 'Statement on the Second Meeting of the International Health Regulations (2005) Emergency Committee Regarding the Outbreak of Novel Coronavirus (2019-nCoV)' *World Health Organization* (30 January 2020), accessed at [https://www.who.int/news/item/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-\(2019-ncov\)](https://www.who.int/news/item/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov)).

<sup>145</sup> C Kantis, S Kiernan & J Bardi 'Updated: Timeline of the Coronavirus' *Think Global Health* (15 January 2021), accessed at <https://www.thinkglobalhealth.org/article/updated-timeline-coronavirus>.

<sup>146</sup> B Carey & J Glanz 'Hidden Outbreaks Spread Through U.S. Cities Far Earlier Than Americans Knew, Estimates Say' *The New York Times* (23 April 2020), accessed at <https://www.nytimes.com/2020/04/23/us/coronavirus-early-outbreaks-cities.html>. Genetic analysis revealed that in excess of 10 000 infections had hammered New York City by 1 March 2020 – the point at which the city confirmed its first case of COVID-19. Scientists, working backwards, surmised that the first cases could have entered New York by as early as late January 2020.

<sup>147</sup> The study further reflected on specifics in relation to country readiness and capacity, with South Africa allocated 'the maximum score for laboratory capacity (100), but a low score in risk communication (20)' – with this serving as an indication of areas for focus in preparing for the inevitable. M Gilbert, G Pullano, F Pinotti, E Valdano, C Poletto, P Boëlle, E d'Ortenzio, Y Yazdanpanah, S Eholie, M Altmann & B Gutierrez 'Preparedness and Vulnerability of African Countries Against Importations of COVID-19: A Modelling Study' (2020) 395 *The Lancet* 871, accessed at [https://doi.org/10.1016/S0140-6736\(20\)30411-6](https://doi.org/10.1016/S0140-6736(20)30411-6).

<sup>148</sup> 'Outbreak Brief #6: Novel Coronavirus (COVID-19) Global Epidemic' *African Union & Africa CDC* (25 February 2020), accessed at <https://africacdc.org/wp-content/uploads/2020/02/COVID-19-Outbreak-Brief-200225-EN.pdf>.

Africans to be repatriated from Wuhan<sup>149, 150, 151</sup>). By 29 February 2020, 60 countries had confirmed SARS-CoV-2 cases – with a total of just over 84 000 cases globally.<sup>152</sup> President Cyril Ramaphosa and his government knew all of the above and yet took few, if any, measures to forestall the foreseeable deleterious effects of the pandemic on South Africa.

On 5 March 2020, South Africa confirmed its first COVID-19 case.<sup>153</sup> By 31 March 2020, a further 1 352 infections had been confirmed – with cases distributed across all nine provinces.<sup>154</sup> President Ramaphosa and his government responded by imposing a strict five-week lockdown in line with Level 5 of their reflexive *Risk-Adjusted Strategy for Economic Decision-Making*. As part of this strategy, the government acknowledged that successful implementation depended on a comprehensive approach to testing, tracing and isolating.<sup>155</sup> Level 5 was also identified as a period during which the healthcare system and healthcare worker capacity would be bolstered.<sup>156, 157</sup> Indeed, as the government's own flattened curve graph above demonstrates, a significant gap (50%) existed between extant healthcare capacity and the number of anticipated COVID-19 cases – even under the best-case scenario. President Ramaphosa and his government promised to deliver 25 000 to 35 000 new ICU beds between 10 April and 3 June 2020.<sup>158</sup> The government's opportunity to use Level 5 as provided went wanting.<sup>159</sup>

<sup>149</sup> A Saba & T Jika 'SA's Quarantine Plan for Coronavirus' *Mail & Guardian* (14 February 2020), accessed at <https://mg.co.za/article/2020-02-14-sas-quarantine-plan-for-coronavirus/>.

<sup>150</sup> T Tucker 'Coronavirus: Don't Panic – But South Africa Needs to be Prepared' *Daily Maverick* (21 February 2020), accessed at <https://www.dailymaverick.co.za/article/2020-02-21-coronavirus-dont-panic-but-south-africa-needs-to-be-prepared/>.

<sup>151</sup> Angelique Coetzee, Chairperson of the South African Medical Association, argued that while South Africa was ready for COVID-19, it did not have the capacity to deliver on large-scale quarantines. 'Coronavirus: SAMA says SA Can't Deal with Mass Quarantine' *eNCA* (22 February 2020), accessed at <https://www.enca.com/news/coronavirus-sama-says-sa-cant-deal-mass-quarantine>.

<sup>152</sup> C Kantis, S Kiernan & J Bardi 'Updated: Timeline of the Coronavirus' *Think Global Health* (15 January 2021), accessed at <https://www.thinkglobalhealth.org/article/updated-timeline-coronavirus>.

<sup>153</sup> Z Mkhize 'First Case of COVID-19 Coronavirus Reported in SA' *National Institute for Communicable Diseases* (5 March 2020), accessed at <https://www.nicd.ac.za/first-case-of-covid-19-coronavirus-reported-in-sa/>.

<sup>154</sup> 'Media Release: Update of COVID-19' *COVID-19 South African Online Portal* (31 March 2020), accessed at <https://sacoronavirus.co.za/2020/03/31/update-of-covid-19-31st-march-2020/>.

<sup>155</sup> 'Risk-Adjusted Strategy for Economic Activity' *NCCC* (April 2020). See graph above.

<sup>156</sup> 'Statement by President Cyril Ramaphosa on Measures to Combat COVID-19 Epidemic' *The Presidency: Republic of South Africa* (15 March 2020), accessed at <https://www.gov.za/speeches/statement-president-cyril-ramaphosa-measures-combat-covid-19-epidemic-15-mar-2020-0000>.

<sup>157</sup> A van den Heever 'Improper Planning, Poor Execution: Why We are Facing a Covid-19 Storm' *News24* (3 July 2020), accessed at <https://www.news24.com/news24/columnists/guestcolumn/opinion-improper-planning-poor-execution-why-we-are-facing-a-covid-19-storm-20200702>.

<sup>158</sup> A Basson 'SA Needs Many More Beds To Be Ready for COVID-19 Peaks, says Ramaphosa' *News24* (31 May 2020), accessed at <https://www.news24.com/news24/southafrica/news/coronavirus-sa-needs-many-more-icu-beds-to-be-ready-for-covid-19-peaks-says-ramaphosa-20200531>.

<sup>159</sup> Professor Alex van den Heever reflected on how, instead of using resources optimally and preparing for the oncoming COVID-19 storm, the government 'failed to implement the testing and tracing strategy at scale, failed to implement contact-tracing at scale, and even failed to seriously expand bed capacity'. With the hard lockdown putting a dent of approximately R1.2 trillion into the economy, van den Heever argued that for the same price tag, the state could instead have 'bought approximately 400 000 ICU beds ... [or] ... funded the running costs of roughly 171 million bed days with a normal mix of general and

Across the course of April 2020, the President and the government placed South Africa under full lockdown – with Alert Level 5 in place from 26 March to 30 April 2020. However, after just over a month at Level 5, and after committing themselves and the nation to this Risk Adjusted Strategy and the steps on which its successful implementation depended – testing, tracing and isolating, and only acting in response to data-intensive feedback – President Ramaphosa and the government (now operating by fiat as the NCCC) proceeded to jettison their chosen reflexive model. On 23 April 2020, the President announced that Level 4 would kick in on 1 May 2020.<sup>160</sup> The President’s message made it crystalline clear that the critical decision-making criteria for determining the appropriate Alert Level as defined in the Risk Adjusted Strategy – ‘virus spread’, and ‘health system readiness’<sup>161, 162</sup> – were likely to be ignored. With each downgrade in Alert Level, the government knowingly allowed for increased viral transmission. As a result, South Africa’s monthly progression through the Alert Levels reads like a pre-planned calendar of events, irrespective of the data:

- Alert Level 4: 1 to 31 May 2020<sup>163</sup>
- Alert Level 3: 1 June to 17 August 2020<sup>164</sup>
- Alert Level 2: 18 August 2020 to 20 September<sup>165</sup>
- Alert Level 1: From 21 September 2020 to 28 December 2020.<sup>166</sup>

After lifting the hard lockdown on 1 June, data provided by the Department of Health confirmed that, in contrast with the March 2020 commitment to deliver 25 000 to 35 000 new ICU beds between 10 April and 3 June 2020, a total of only 207 critical care beds had been added to the 2 309 beds originally allocated for COVID-19 cases.<sup>167, 168</sup> The start of

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critical care beds.’ A van den Heever ‘Improper Planning, Poor Execution: Why We are Facing a Covid-19 Storm’ *News24* (3 July 2020), accessed at <https://www.news24.com/news24/columnists/guestcolumn/opinion-improper-planning-poor-execution-why-we-are-facing-a-covid-19-storm-20200702>.

<sup>160</sup> ‘SA to Move from Level 5 Lockdown to Level 4’ *South African Government News Agency* (23 April 2020), accessed at <https://www.sanews.gov.za/south-africa/sa-move-level-5-lockdown-level-4>. South Africa was placed under Level 5 from 26 March 2020 until 20 April 2020.

<sup>161</sup> *ibid.*

<sup>162</sup> ‘About Alert System: March 2020 – December 2020’ *Government of South Africa* (December 2020), accessed at <https://www.gov.za/covid-19/about/about-alert-system>.

<sup>163</sup> ‘Disaster Management Act: Regulations: Alert Level 4 During Coronavirus COVID-19 Lockdown’ *Government of South Africa* (29 April 2020), accessed at <https://www.gov.za/covid-19/about/disaster-management-act-regulations-alert-level-4-during-coronavirus-covid-19-lockdown>.

<sup>164</sup> ‘Disaster Management Act: Regulations: Alert Level 3 During Coronavirus COVID-19 Lockdown’ *Government of South Africa* (25 June 2020), accessed at <https://www.gov.za/covid-19/about/alert-level-3-during-coronavirus-covid-19-lockdown>.

<sup>165</sup> ‘Coronavirus COVID-19 Alert Level 2’ *Government of South Africa* (17 August 2020), accessed at <https://www.gov.za/coronavirus/alert-level-2>.

<sup>166</sup> ‘Coronavirus COVID-19 Alert Level 1’ *Government of South Africa* (20 September 2020), accessed at <https://www.gov.za/covid-19/about/coronavirus-covid-19-alert-level-1>.

<sup>167</sup> A Basson ‘SA Needs Many More Beds To Be Ready for COVID-19 Peaks, says Ramaphosa’ *News24* (31 May 2020), accessed at <https://www.news24.com/news24/southafrica/news/coronavirus-sa-needs-many-more-icu-beds-to-be-ready-for-covid-19-peaks-says-ramaphosa-20200531>.

<sup>168</sup> K Cowan & S Evans ‘Just 207 Critical Care Beds and 350 Ventilators Added To Public Hospitals During Lockdown’ *News24* (7 June 2020), accessed at <https://www.news24.com/news24/southafrica/investigations/exclusive-just-207-critical-care-beds-and-350-ventilators-added-to-public-hospitals-during-lockdown-20200607>.

June 2020 also ushered in a further relaxation from Level 4 to Level 3. The government's move reflected no more than an effort by President Ramaphosa and his government to reopen the economy.<sup>169</sup> The government produced no hard public health data to support the move from Level 4 to Level 3, or, subsequently, from Level 3 to Level 2. Of course, given the rapid increase in hospitalisations and deaths across the nation, even the most blinkered bureaucrat might have suspected a change in the rate of transmission. Prior local epidemiological models from March through April 2020 anticipated a surge during this period.<sup>170</sup> However, instead of increasing tests during late July 2020 and early August 2020, when South Africa rocketed to fifth in the world in terms of COVID-19 infections, the official amount of testing fell to negligible numbers.<sup>171</sup> Here below we find the 'official' chart of hospitalisations – at the end of December 2020 as the second wave accelerated.

By mid-August 2020, South Africa's leadership shifted the country on to Level 2. The NCCC's Risk Adjusted Strategy specifies 'moderate virus spread, with high readiness' as the criteria for this level.<sup>172</sup> However, it subsequently emerged that the assessment of 'moderate virus spread' could not have been further from the truth. Discovery Health's proprietary data married to the South African Medical Research Council's (SAMRC's) analysis and other data points<sup>173</sup> strongly suggested – in the absence of testing – that 13 million SARS-CoV-2 infections (25% of South African adults) had occurred by 24 August 2020. Reading similar data points, Ministerial Advisory Committee Professor Shabir Madhi estimated that the number of infections more likely fell within 'the region of 15 million to 20 million'.<sup>174</sup> A day later, on 15 September 2020, Minister of Health Zweli Mkhize conceded that by late August 2020 at least 12 million South Africans had been infected during the first wave of SARS-CoV-2.<sup>175</sup> In an official letter, dated 21 September 2020, Minister Mkhize 'disbanded' his initial expert Ministerial Advisory Committee

<sup>169</sup> M Merten 'Lockdown Level 3 for the Whole Country in Drive to Get Devastated Economy Breathing Again' *Daily Maverick* (25 May 2020), accessed at <https://www.dailymaverick.co.za/article/2020-05-25-lockdown-level-3-for-the-whole-country-in-drive-to-get-devastated-economy-breathing-again/>.

<sup>170</sup> M Scudellari 'How the Pandemic Might Play Out in 2021 and Beyond: This Coronavirus is Here for the Long Haul' (2020) 22 *Nature* 584; K Cowan 'Covid-19 Projections Show 12 to 13 million Infections by November' *News24* (21 May 2020), accessed at <https://www.news24.com/news24/southafrica/news/breaking-projections>; S Muller 'South Africa's Use of COVID-19 Modelling Has Been Deeply Flawed. Here's Why' *The Conversation* (8 June 2020), accessed at <https://theconversation.com/south-africas-use-of-covid-19-modelling-has-been-deeply-flawed-heres-why-140002>.

<sup>171</sup> 'Covid-19 in South Africa' *News24* (July-August 2020), accessed at <https://covid-dashboard.news24.com/#testing>.

<sup>172</sup> 'Risk Adjusted Strategy for Economic Activity' NCCC (April 2020).

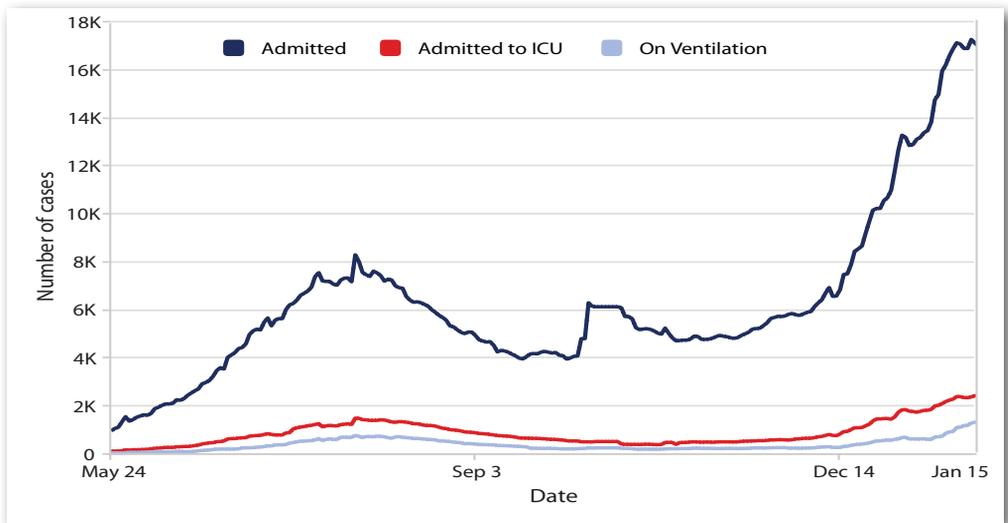
<sup>173</sup> Discovery Health, working with South African Medical Research Council data and its own proprietary data, established that there were some 13 million infections (rather than the reported 640 000 infections) by August 2020 and that the real COVID-19 death rate was estimated to be up to 3.2 times higher than reported figures. 'Discovery Data Points to a Worrying and Potentially Deadly Trend in South Africa' *BusinessTech* (9 September 2020), accessed at <https://businesstech.co.za/news/lifestyle/432762/discovery-data-points-to-a-worrying-and-potentially-deadly-in-south-africa/>.

<sup>174</sup> E Ellis 'Covid-19 May Have Already Infected 20 Million in South Africa, says Prof Madhi' *Daily Maverick* (14 September 2020), accessed at <https://www.dailymaverick.co.za/article/2020-09-14-covid-19-may-have-already-infected-20-million-in-south-africa-says-prof-madhi/>.

<sup>175</sup> AFP 'Mkhize: About 12 Million People in SA May Have Contracted Covid-19' *News24* (15 September 2020), accessed at <https://www.news24.com/news24/southafrica/news/mkhize-about-12-million-people-in-sa-may-have-contracted-covid-19-20200915>.

– entirely ‘out of the blue’ for many members.<sup>176</sup> In his letter, he offered as a justification, without explanation, the need for ‘social and behavioural scientists’.<sup>177</sup>

On 21 September 2020, in spite of the Health Minister’s confirmation that at least 12 million had been infected by August 2020, President Ramaphosa and his government continued to follow a modus operandi of limited testing and moved the nation to Level 1 (a level that, as text and as interpreted, imposed no constructive restrictions). The South African government had taken the country on a four-and-a-half month headlong rush from Level 4 in May 2020, to Level 1 (21 September 2020): a state with no meaningful legal restrictions or sanctions on most economic or social activities. During this period, and the three months thereafter, the government eliminated a wide range of well-established health norms and created a sense of normalcy, which a trusting public chose to believe. One cannot, therefore, claim surprise that South Africa’s population largely failed to adhere to the basics of non-pharmaceutical interventions necessary to limit transmission of the virus. Moving rapidly from Level 5 to Level 4, 3, 2 and then 1 clearly communicated the message that everything was okay – which the government knew to be untrue. During the eight-month period between the introduction of Level 4 through the extended period at Level 1 the virus spread and infections peaked, not just once but twice. As hospitalisations increased during the second wave, the healthcare system’s readiness not only remained largely unchanged, but the entire system – both public and private – began to collapse.



#### HOSPITALISATIONS OVER FIRST WAVE AND PRIOR TO PEAK OF SECOND WAVE<sup>178</sup>

<sup>176</sup> K Cowan & A Karrim ‘Mkhize Disbands Ministerial Advisory Committee on Covid-19 ‘Out of the Blue’ *News24* (25 September 2020), accessed at <https://www.news24.com/news24/southafrica/investigations/mkhize-disbands-ministerial-advisory-committee-on-covid-19-out-of-the-blue-20200925>, cited Dr Angelique Coetzee, Chairperson of the South African Medical Association and quoted Dr Francois Venter, another by-then former Ministerial Advisory Committee member, as follows: ‘It is not like the epidemic is anywhere near over. Government really needs to embrace transparency, and explain jetting in a crowd of WHO experts, an inexplicable curfew, or disbanding an expert panel that didn’t rubber stamp decisions made behind closed doors.’

<sup>177</sup> *ibid.*

<sup>178</sup> ‘Covid-19 in South Africa’ *News24* (May 2020 – January 2021), accessed at <https://covid-19dashboard>.

At roughly the same time, in September 2020, scientists at KRISP (the KwaZulu-Natal Research Innovation and Sequencing Platform) had been begun to analyse a new, more transmissible strain of the virus.<sup>179</sup> KRISP's genetic scientists found that while viruses usually evolve at rate of approximately two mutations a month, 20 new mutations within SARS-CoV-2 had emerged within a few weeks – with a number of these alterations containing the 'receptor binding domain of the virus' that adheres to the human cell and induces infection. The unique forms of mutation have raised legitimate fears that some if not all vaccine producers will be obligated to update vaccines to ensure reasonably high degrees of efficacy in the presence of signal changes in the spike protein. KRISP scientists shared their findings with the WHO's COVID-19 Evolution Working Group in early December 2020. Despite awareness of this far more highly transmissible variant – with its additional potential capacity to evade vaccines – President Ramaphosa and his government kept South Africa at Level 1 and allowed its citizens to continue with their holiday excursions. The mix of a more transmissible and virulent variant and a laissez-faire attitude with respect to behavioural restrictions created a lethal cocktail that led to a second wave that dwarfed the first.

From early October 2020 through November 2020, doctors and public health officials in the Eastern Cape pleaded with government for emergency assistance with the province's rapid rise in infections and hospitalisations – as the healthcare system simply fell apart. (Indeed, KRISP subsequently identified the exponential growth in cases with transmission of the new variant.<sup>180, 181</sup>) Instead of closing down the Cape and the Garden Route – given the obvious risks associated with a more transmissible virus – South Africa's government refused to change the alert level from Level 1. By so refusing, the government increased

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news24.com/. The dip in early October 2020 has been candidly attributed to a failure to report new hospitalisations to the NCID.

<sup>179</sup> South Africa already knew by the end of September 2020 that new COVID-19 mutations were developing at a rapid rate. H Wasserman 'SA's Covid Variant: How Much More Contagious It May Be, and What It Could Mean for Vaccines' *Business Insider* (28 December 2020), accessed at <https://www.businessinsider.co.za/new-south-african-covid-19-variant-expert-2020-12>. UK scientists used the same approach to identify their own variant. J Wise 'Covid-19: New Coronavirus Variant is Identified in UK' (2020) *British Medical Journal* 371, accessed at <https://doi.org/10.1136/bmj.m4857>. Armed with this information, and an out-of-control wave of infections, the United Kingdom imposed a stringent six-week stay-in-place lockdown from 4 January 2021, even as it started to roll out vaccines. C Skopeliti & A Sparrow 'UK Covid: Boris Johnson Tells People To Stay at Home as England Enters Third National Lockdown – As It Happened' *The Guardian* (4 January 2021), accessed at <https://www.theguardian.com/politics/live/2021/jan/04/uk-coronavirus-live-matt-hancock-south-african-covid-variant-lockdown-schools-latest-updates>. In addition, the UK announced that flights from South Africa would be restricted, given that scientists feared that South Africa's variant had the potential to withstand existing vaccines. 'South African Covid Variant More Infectious Than UK Strain: Hancock' *Polity* (4 January 2021), accessed at <https://www.polity.org.za/article/s-africa-covid-variant-more-infectious-than-uk-strain-hancock-2021-01-04>.

<sup>180</sup> Doctors at public hospitals across Nelson Mandela Bay raised red flags in October 2020 – to no avail. E Ellis 'In the Eye of the Storm: Living in South Africa's Covid-19 Hotspot' *Daily Maverick* (28 November 2020), accessed at [dailymaverick.co.za/article/2020-11-28-in-the-eye-of-the-storm-living-in-south-africacovid](http://dailymaverick.co.za/article/2020-11-28-in-the-eye-of-the-storm-living-in-south-africacovid):

We have been warning since October that something is going very wrong here. Nobody listened. We watched the cases become more and more.

<sup>181</sup> N Craig 'KZN Research Team Discovers New Covid-19 Variant' *The Sunday Tribune* (20 December 2020), accessed at <https://www.iol.co.za/sunday-tribune/news/kzn-research-team-discovers-new-covid-19-variant-97904c44-bba9-4b5e-81f7-603204f70ce3>.

the transmission of the new variant throughout the country. The declaration of Nelson Mandela Bay as a hot spot turned out to be about the best response the NCCC could muster.<sup>182</sup>

In December 2020, despite rising infections, the government continued to allow international air travel. On 9 December 2020, some two months after warnings by doctors and scientists in the Eastern Cape, Minister Mkhize, finally acknowledged that South Africa had now been beset by a second wave – with hospitals and healthcare facilities across four of its nine provinces overwhelmed by COVID-19 cases.<sup>183</sup> A week later, Minister Mkhize confirmed what we already knew: a far more virulent form of SARS-COV-2 – the ‘501.V2 Variant’ – had generated a second wave that spread much more rapidly and widely than the first.<sup>184</sup> Then came the *coup de grâce*. On 26 December 2020, *The New York Times* and other newspapers worldwide captured in gory detail that South Africa had allowed its healthcare systems to crumble and that our nurses could not provide the most basic level of care for any patients, let alone their COVID-19 wards.<sup>185</sup>

President Ramaphosa and his government clearly did not enjoy being seen without any clothing. While lifting the Alert Level from 1 to Level 3 – an act without any worrisome effects on the economy or palpable effects on public health – President Ramaphosa dressed down his fellow South Africans, the people that he had sworn under oath to protect. In his televised address of 28 December 2020, the President stated that:

We have let down our guard, and unfortunately, we are now paying the price. We have not been wearing masks. We are not washing our hands or sanitising. And we are not keeping a safe distance from others. We have continued to host and attend social gatherings and events that in many cases flout public health regulations ... Hand sanitiser is not being used, and masks are being worn to gain entry, only to be taken off once inside. In these same social gatherings, the consumption of alcohol in restaurants, in nightclubs and taverns has contributed to risky behaviour like not wearing masks and not observing social distancing.<sup>186</sup>

We, of course, had *not* let down our guard. In the government’s headlong rush to Level 1 and to opening up the economy, the President and his government had gutted virtually

<sup>182</sup> ‘Nelson Mandela Bay Declared a Hotspot’ *South African Government News Agency* (3 December 2020), accessed at <https://www.sanews.gov.za/south-africa/nelson-mandela-bay-declared-hotspot>.

<sup>183</sup> ‘Mkhize Declares Second Wave of Covid-19 in South Africa as New Cases Pass 6,000 in A Day’ *BusinessTech* (9 December 2020), accessed at <https://businesstech.co.za/news/trending/455928/mkhize-declares-second-wave-of-covid-19-in-south-africa-as-new-cases-pass-6000-in-a-day/>. Mkhize noted the following as factors that were taken into consideration when determining whether the country had entered a new wave: ‘the number of tests done, the positivity rate, the number of positive cases, the numbers of people who are admitted to ICU, and the number of fatalities.’ In so far as the Minister founds his decision on testing, and official cases, they ought to be viewed with great circumspection.

<sup>184</sup> ‘New COVID-19 Variant Identified in SA’ *COVID-19 South African Online Portal* (18 December 2020), accessed at <https://sacoronavirus.co.za/2020/12/18/new-covid-19-variant-identified-in-sa/>.

<sup>185</sup> S Fink ‘As Virus Resurges in Africa, Doctors Fear the Worst Is Yet to Come’ *The New York Times* (26 December 2020), accessed at <https://www.nytimes.com/2020/12/26/world/africa/africa-coronavirus-pandemic.html?searchResultPosition=2>.

<sup>186</sup> ‘Statement by President Cyril Ramaphosa on Progress in the National Effort to Contain the COVID-19 Pandemic, Tuynhuys, Cape Town’ *The Presidency: Republic of South Africa* (28 December 2020), accessed at <http://www.thepresidency.gov.za/speeches/statement-president-cyril-ramaphosa-progress-national-effort-contain-covid-19-pandemic%2C-tuynhuys%2C-cape-town>.

every public health requirement<sup>187</sup> for stemming transmission of COVID-19. The people of South Africa – led on by President Ramaphosa – had no reason to suspect that something was gravely amiss.<sup>188</sup> The use of masks, sanitising, social distancing and gatherings had been relegated and diminished to mere guidelines – for which abrogation brought no legal sanction nor social stigma. Some 11 months after leading South Africans into a death spiral, the President had the unmitigated gall to turn around and blame his flock.

The bad news and the deflection did not end there.

By late December 2020, not only had the government failed to stem the transmission of SARS-COV-2, its efforts to secure vaccines for South Africa could not pass the laugh test. Anyone watching the global vaccine effort would have picked up Dr Anthony Fauci's well-chosen words in July 2020 about 'cautious optimism' with respect to at least some vaccine readiness by the end of 2020.<sup>189</sup> Clearly no one in government cared to pay attention to one of the world's leading infectious disease experts. The government's effort cannot even be charitably described as halting. While the WHO COVAX initiative to supply vaccines to the developing world had been bedevilled from the outset and has teetered on the brink of failure, South Africa repeatedly failed to join this effort.<sup>190, 191</sup> Guaranteed no more than 10% of the vaccinations required for the nation, South Africa missed both its November 2020 and December 2020 deadlines of a 15% down-payment (a mere R283 million) required for participation.<sup>192</sup> After the press and scientists reminded the government yet again of its obligations, South Africa made its December 2020

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<sup>187</sup> Nothing was done for those in crowded spaces who could not social distance; a predominantly-poor population was told to wear masks but not provided with access to safe, affordable or free masks; taxis were allowed to operate at 100% capacity – despite almost negligible adherence to mask-wearing and ventilation 'guidelines'; despite condition-free funding being made available by the IMF for the purposes of addressing the COVID-19 disaster, hospitals remained woefully unprepared for the impending waves of disaster; communication skirted around the real state of play – with inadequate information provided to the public on specifics (e.g., more likely estimates of COVID-19 cases and probable deaths, and how to best keep safe); environments prone to super-spreader events (e.g., religious gatherings, funerals, restaurants, pubs and taverns, gyms) were allowed to operate – with socio-economic and political pressures prevailing over health concerns, and with inadequate measures and enforcement in place to counter possible COVID-19 infections.

<sup>188</sup> E Ellis 'In the Eye of the Storm: Living in South Africa's Covid-19 Hotspot' *Daily Maverick* (28 November 2020), accessed at [dailymaverick.co.za/article/2020-11-28-in-the-eye-of-the-storm-living-in-south-africascovid](https://dailymaverick.co.za/article/2020-11-28-in-the-eye-of-the-storm-living-in-south-africascovid). Healthcare workers in Nelson Mandela Bay argued that government's original decision to shift to Level 1 was a key source of problems, given that it '... confused people. They thought the virus was gone.'

<sup>189</sup> O Laughland 'Fauci "Cautiously Optimistic" US Could Have Vaccine by End of the Year' *The Guardian* (31 July 2020), accessed at <https://www.theguardian.com/us-news/2020/jul/31/fauci-coronavirus-vaccine-washington-hearing>.

<sup>190</sup> A Sguazzin 'South Africa Misses Covax Deadline to Secure Vaccines' *Bloomberg Quint* (17 December 2020), accessed at <https://www.bloombergquint.com/business/s-africa-misses-covax-deadline-yet-to-make-payment-guarantee>.

<sup>191</sup> *ibid.* Bloomberg noted on 17 December 2020 that, at that point, there was still no guarantee in place to cover the remaining 85% outstanding on the full payment. Payment of the initial 15% deposit was finally made on 22 December 2020. 'South Africa Makes R283 Million Down Payment for Covax Vaccine Participation' *BusinessTech* (22 December 2020), accessed at <https://businesstech.co.za/news/trending/458110/south-africa-pays-r283-million-down-payment-for-covax-vaccine-participation/>.

<sup>192</sup> *ibid.*

down-payment – five days late.<sup>193</sup> Given its pandemic denialism and its inept management of a ‘state of disaster’, it should come as no surprise that, once caught out, the government of South Africa’s vaccine experts could not keep their stories straight.

First, Barry Schoub, the chair of the Ministerial Advisory Committee for Covid-19 Vaccination, asserted that vaccines should not be seen as a ‘magic wand’ and suggested that such a policy shift could ‘dangerously threaten ... the public motivation to continue with the non-pharmaceutical interventions’.<sup>194</sup> No one thinks of vaccines as ‘magic wands’ and South Africa’s record with respect to behavioural interventions played a significant role in generating the high levels of transmission during both the first wave and the second wave during 2020. Second, rather than acknowledge the government’s failure to act, Health Minister Zweli Mkhize stated (contrary to Schoub) that South Africa had, in fact, been engaged in discussions with a wide range of pharmaceutical manufacturers – from Pfizer, to Moderna, to AstraZenca, to Johnson & Johnson. He declared that these efforts to vaccinate 67% of the population would begin in February 2021.<sup>195</sup> Third, and only a few hours after Minister Mkhize’s announcement, the Department of Health’s Deputy Director General, Anban Pillay, flatly contradicted the Minister. Deputy Director General Pillay confirmed that while the Department of Health had ‘reached out to [Moderna] ... [i]t’s clear that they have no intention of filing a dossier any time soon with SAHPRA’.<sup>196</sup> Other parties punched further holes in the Minister’s claims. Moderna stated that it was not, and was unlikely to be, in negotiations with any African nation.<sup>197</sup> Pfizer indicated that it only planned to provide healthcare workers alone on the entire African continent with a sum of 50 million doses (i.e. 25 million complete vaccinations).<sup>198</sup> Johnson & Johnson noted that their vaccine would not be ready for approval by the US FDA or the EU before the end of January or early February 2021. As for AstraZeneca/Oxford’s vaccine, it still had to await approval from the FDA and EU – given serious concerns regarding the quality of the trials and subsequent ‘serious errors’ in the associated data.<sup>199</sup>

The only person to apologise for playing a part in the vaccine fiasco and cover-up, Professor Salim Abdool Karim, chairperson of the Ministerial Advisory Committee, acknowledged that South Africa should have attempted to secure access to vaccines from

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<sup>193</sup> *ibid.*

<sup>194</sup> B Schoub ‘The Covid-19 Vaccine and the Danger of Creating False Expectations’ *Daily Maverick* (3 January 2021), accessed at <https://www.dailymaverick.co.za/article/2021-01-03-the-covid-19-vaccine-and-the-danger-of-creating-false-expectations/>.

<sup>195</sup> N McCain ‘Mkhize: Covid-19 Vaccine to Target Two-Thirds of the Population as Govt Aims for Herd Immunity’ *News24* (3 January 2021), accessed at <https://www.businessinsider.co.za/new-south-african-covid-19-variant-expert-2020-12>.

<sup>196</sup> G York ‘COVID-19 Vaccine Supplies for Africa Dwindling as Moderna Opts Out’ *The Globe and Mail* (3 January 2021), accessed at <https://www.theglobeandmail.com/world/article-vaccine-supplies-for-africa-dwindling-as-moderna-opts-out/>.

<sup>197</sup> *ibid.*

<sup>198</sup> A Sguazzin ‘Africa Left with Few Options for Vaccines, as Pfizer Offers to Supply Health Care Workers’ *Bloomberg News* (3 January 2021), accessed at <https://www.bloomberg.com/news/articles/2021-01-03/pfizer-to-supply-african-health-care-workers-with-vaccines>.

<sup>199</sup> H Breuck ‘When Will AstraZeneca’s COVID-19 Vaccine Be Available in the US?’ *Business Insider* (8 January 2021), accessed at <https://www.businessinsider.com/when-will-astrazeneca-covid-vaccine-be-approved-in-us-2021-1?IR=T>.

July 2020 onwards.<sup>200</sup> Despite this apology, no government counterpart could possibly make sense of President Ramaphosa's subsequent three-phase plan for vaccinating 40 to 60 million members of the population by the end of 2021. To say it met with some derision would put matters mildly. Dr Angelique Coetzee, head of the South African Medical Association, responded, in part, as follows:

That would mean we would have to vaccinate 150,000 people every day for the next 12 months. It's unrealistic ... We do not have that capacity. Who is going to vaccinate all these people?<sup>201</sup>

From its failure to stem transmission of either variant of SARS-CoV-2, to its abject failure to plan for the purchase or the immensely complicated rollout of vaccines, the President and his government had led South Africa on an 11-month death spiral by the end of December 2020. One might hope for a better response in 2021. However, given the impediments articulated in the 'what we know about the science of COVID-19' section below – along with a government that has repeatedly failed to keep up its end of the social contract with its people – that's a pretty big ask.

### **G. 'Do You Feel Lucky': Good News, Bad News and Things We Don't Know with Any Clarity about SARS-CoV-2 and COVID-19 – But about Which We Can Take an Informed Guess at the End of December 2020**

The world beyond our borders has good news and bad news – and even more things about which we can only simply speculate at the end of December 2020. So here we go, beginning with what we actually do know.

What's true?

The current view of the world's scientific community is that the primary mode of transmission of SARS-CoV-2 is through explosions (via coughs, sneezes and heavy breathing) of extremely fine aerosol particles that hang in the air for quite a substantial period of time: not seconds, not minutes, but several hours.<sup>202</sup> We also know that – contrary to public health guidelines – explosions, say a cough, can carry viral droplets three metres or nine feet and will reach you in less than a minute.<sup>203</sup> (The almost century

<sup>200</sup> A Karrim "I Let Our Country Down," Says Prof Salim Abdool Karim on SA's Covid-19 Vaccine Race – Report' *News24* (12 January 2021), accessed at <https://www.news24.com/news24/southafrica/investigations/i-let-our-country-down-says-prof-salim-abdool-karim-on-sas-covid-19-vaccine-race-report-20210112>.

<sup>201</sup> "It's Unrealistic": SA's Vaccine Plan Raises Eyebrows Ahead of Launch' *News24* (13 January 2021), accessed at <https://www.news24.com/news24/southafrica/news/its-unrealistic-sas-vaccine-plan-raises-eyebrows-ahead-of-launch-20210113>.

<sup>202</sup> American Physical Society 'Social Distancing Isn't Enough to Prevent Infection – How to Detect COVID-19 Super-Spreaders' *Science Tech Daily* (28 November 2020), accessed at <https://Scitechdaily.Com/Social-Distancing-Isnt-Enough-To-Prevent-Infection-How-To-Detect-Covid-19-Super-Spreaders/>.

<sup>203</sup> *ibid.* Thus, even social distancing, as commonly understood in December 2020, proves insufficient to diminish fully the rate of infection:

'My work has shown that exhalations are not isolated droplets but in fact come out as a turbulent, multiphase cloud. This gas cloud is critical in enhancing the range and changing the evaporation physics of the droplets within it,' said Bourouiba. 'In the context of respiratory infectious diseases, particularly now COVID-19, this work underscores the importance of changing distancing and protection guidelines based on fluid dynamics research, particularly regarding the presence of this cloud' ... The researchers found that below a relative distance known as the integral scale, droplets move ballistically and very fast ... Consider an example where the integral scale is two metres. If you were standing

old standard of standing two metres / six feet apart – to avoid airborne diseases – finds its support in woefully outdated experiments carried out in the 1930s.) So not only will the particles get to you in a minute if you are sitting a mere three metres away – they can also linger for many hours in the same space or be buffeted further (as recent particle science research reflects). Only N95 masks capture 99.9% of such fine viral particles.<sup>204</sup> (But even if you only have a cloth mask – only wearing it over both mouth and nose makes a palpable difference. Your comfort takes back seat to my safety and that of the rest of the community.) In addition to wearing such masks, you can spend most of your time, as I have, in isolation. You could have lived from March 2020 to December 2020 at what South Africa calls Level 5 or what my home state of New Jersey calls ‘strict stay-in-place orders’. In sum, you could remain at home – work remotely – enjoy the company of your family (who also wear masks and remain in fairly strict isolation), and visit doctors only as needed and remain corporeally connected to friends that you can absolutely trust to do the same. Walking the dog in the park may be okay – but remember dogs can become infected with SARS-CoV-2.<sup>205</sup> And runners will create their own sizeable explosions as they pass you. Otherwise, everything else can, if you have the ability to read this book, be delivered to your door (and sprayed with disinfectant) or handled remotely. *This much I know.*

You can keep washing your hands as much as you like. Though fist bumps remain decidedly discouraged. (If you need to ask, should I do ‘this’ during a pandemic, then the answer is probably ‘no’.) Again, it’s really all about the air that you breathe, and a virus that loves to linger in unventilated spaces and share your space. It will remain airborne for hours, not seconds, if left to its own devices.<sup>206</sup> Our out-dated social distancing standards are not enough. Isolation is the only sure bet. However, neither of them are the preferred options

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*three metres ... from an infected person, their droplets would almost certainly reach you in about a minute. ‘It showed us how futile most social distancing rules are once we are indoors,’ said Mitra, who conducted the research with colleague Akshay Bhatnagar at the Nordic Institute for Theoretical Physics and Akhilesh Kumar Verma and Rahul Pandit at the Indian Institute of Science.*

ibid.

<sup>204</sup> A Mandavilli ‘239 Experts with One Big Claim: The Coronavirus is Airborne’ *The New York Times* (4 July 2020), accessed at <https://www.nytimes.com/2020/07/04/health/239-experts-with-one-big-claim-the-coronavirus-is-airborne.html>; A Mandavilli ‘WHO to Review Evidence of Airborne Transmission of Coronavirus: The World Health Organization Plans to Update Its Advice after Hundreds of Experts Urged The Agency To Reconsider The Risk Of Aerosol Transmission’ *The New York Times* (7 July 2020), accessed at <https://www.nytimes.com/2020/07/07/health/coronavirus-aerosols-who.html>.

<sup>205</sup> ‘COVID-19 and Animals’ *Center for Disease Control* (4 December 2020), accessed at <https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/animals.html#>:

At this time, there is no evidence that animals play a significant role in spreading the virus that causes COVID-19. Based on the limited information available to date, the risk of animals spreading COVID-19 to people is considered to be low ... but it appears that it can spread from people to animals in some situations, especially after close contact with a person with COVID-19.

<sup>206</sup> American Physical Society ‘Understanding dangerous droplet dynamics’ *ScienceDaily* (23 November 2020), accessed at <https://www.sciencedaily.com/releases/2020/11/201123173446.htm>:

*Besides traveling further and faster, droplets may also survive longer indoors than previously believed. Research in the 1930s analyzed how long respiratory droplets survive before evaporating or hitting the ground. The nearly century-old findings form the basis of our current mantra to ‘stay six feet away’ from others. Physicists from the University of Twente revisited the issue. They conducted a numerical simulation indicating that droplet lifetimes can extend more than 100 times longer than 1930s standards would suggest. ‘Current social distancing rules are based on a model which by now should be outdated,’ said physicist Detlef Lohse, who led the team. (Emphasis added)*

of the masses. Given our druthers, we prefer to super-spread because the South African state has until the end of December acted as if we are at Level 1, communicated that always comforting ‘back to normal’ message and imposed (and enforced) few if any restrictions on our autonomy. How else can one explain that of 1 344 Gauteng matric revellers at a single KwaZulu-Natal party in early December 2020, 984 contracted COVID-19.<sup>207</sup> People are people: meaning that they have a penchant for wearing t-shirts that too often read – ‘I’m with Stupid.’ Just ask the matric revellers who partied like its 1999.

What follows are the half dozen pieces of reasonably good news, along with some mixed reviews, about I do know as of late December 2020.

First. As of late December 2020, two vaccines will have been approved, or are close to approval, by the US Food and Drug Administration and its EU counterpart: jabs created and manufactured by Pfizer/BioNTech and Moderna using a novel mRNA platform.<sup>208</sup> The first batch will largely be deployed to frontline healthcare providers and high-risk residents and their caretakers at ‘retirement homes’. Various jurisdictions have however made it clear that different desiderata will determine who gets to go first in the queue. As a general matter, people with comorbidities, or who live in disadvantaged communities, or that have demonstrated a higher risk for infection, serious illness and fatality follow the elderly, healthcare workers and essential workers in the otherwise haphazard process of vaccine distribution.<sup>209</sup> Another nine vaccines may come online by the middle of 2021 and begin to reach a greater number of people and nations. *This much I know.*

Second. Our long-term immune response to SARS-CoV-2 may be more robust than the

<sup>207</sup> But as we have seen in the last section – human beings don’t always take intelligent risks. That’s good news and bad news. We know how to behave – how to protect ourselves and others – but like a good Catholic, quite often we’d rather transgress and confess, or avoid confession entirely. In December of 2020 – despite widespread news of superspreading events across the world over the preceding five months – an astounding 984 of 1322 Gauteng matric revellers at a single event in KwaZulu-Natal contracted COVID-19. G Makhafola ‘Covid-19: Nearly 1 000 Rage Festival Goers from Gauteng Test Positive’ *News24* (11 December 2020), accessed at <https://www.news24.com/news24/southafrica/news/covid-19-nearly-1-000-rage-festival-goers-from-gauteng-test-positive-20201212>.

<sup>208</sup> ‘Covid Vaccine: US Drugs Agency FDA to Proceed with Pfizer Approval by Monday (14 December 2020)’, *BBC News* (11 December 2020), accessed at <https://www.bbc.com/news/world-us-canada-55265477>. Moderna is not far behind, and AstraZeneca, despite trial stumbles, is third in the queue. A Dunn ‘Moderna’s Ambitions of Pumping Out Up to 1 Billion Doses of a Coronavirus Vaccine Rest on a Former Polaroid Factory That’s Never Produced an Approved Drug’ *Business Insider* (9 September 2020), accessed at <https://www.businessinsider.com/how-moderna-plans-to-mass-produce-coronavirus-vaccine-norwood-factory-2020-12?utm>. (If you can make a vaccine, you can convert a Polaroid Plant.) See, finally, ‘Phase III Clinical Trial Success: Oxford COVID-19 Vaccine is Safe and Protects against Disease’ *The Lancet* (9 December 2020), accessed at <https://scitechdaily.com/phase-iii-clinical-trial-success-oxford-covid-19-vaccine-is-safe-and-protects-against-disease/>. However, as at end December 2020 only the United Kingdom has granted approval for the AstraZeneca vaccine – and its efficacy and the data still remain under a cloud as the UK has pressed ahead. W Booth & K Adam ‘Britain Grants Approval to Coronavirus Vaccine by Oxford and AstraZeneca’ *The Washington Post* (30 December 2020), accessed at [https://www.washingtonpost.com/world/europe/coronavirus-vaccine-britain-oxford-astrazeneca/2020/12/30/1150e85a-4a74-11eb-97b6-4eb9f72ff46b\\_story.html](https://www.washingtonpost.com/world/europe/coronavirus-vaccine-britain-oxford-astrazeneca/2020/12/30/1150e85a-4a74-11eb-97b6-4eb9f72ff46b_story.html).

<sup>209</sup> S Nebehay ‘Ten COVID-19 Vaccines Seen by Mid-Year, Head of Global Pharma Group Says’ *Reuters* (27 November 2020), accessed at <https://www.reuters.com/article/health-coronavirus-vaccines-ifpma/ten-covid-19-vaccines-seen-by-mid-year-head-of-global-pharma-group-says-id>. See also ‘10 Covid-19 Vaccines Likely by Mid-2021’ *Mint* (28 November 2020), accessed at <https://www.livemint.com/news/world/10-covid-19-vaccines-likely-by-mid-2021-global-pharma-group-head-says-11606532691627.html>: ‘So far we have 3 out

first studies initially suggested. That's good news not only for the soon-to-be inoculated, but also for many of the already infected and unvaccinated alike. While antibody levels in some cohorts of infected patients appear to tail off over time, other immune cells – T cells and B cells – appear to respond powerfully to new exposures to SARS-CoV-2 and kickstart a positive defensive response.<sup>210</sup> Other studies show a fairly robust six-month response to infection.<sup>211</sup> *This much I know.*

Third. Initial estimates of a timeframe as short as 18 months before a viable vaccine could be created and manufactured had seemed irrationally exuberant to many in the scientific and vaccination-making community.<sup>212</sup> According to one expert, Robert van Exan, a cell biologist who has worked in the vaccine industry for decades, 'we won't see a vaccine approved until at least 2021 or 2022, and even then, such an expectation 'is very

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of 3 were hits. I would expect that we will see something similar with Johnson & Johnson, I would expect that we would see similar positive results with Novavax, and many others, such as Sanofi Pasteur, GSK.'

<sup>210</sup> Two late 2020 studies, the first peer reviewed by mid-November 2020, the second not, showed evidence of a slightly better immune responses than prior peer-reviewed studies indicated. I Schulien, J Kemming, V Oberhardt et al. 'Characterization of Pre-existing and Induced SARS-CoV-2-Specific CD8+ T cells' (2020) *Nature: Medicine* (12 November 2020), accessed at <https://doi.org/10.1038/s41591-020-01143-2> and <https://www.nature.com/articles/s41591-020-01143-2>; J Dan et al. 'Immunological Memory to SARS-CoV-2 Assessed for Greater than Six Months after Infection' (2020) *bioRxiv* (16 November 2020), accessed at <https://www.biorxiv.org/content/10.1101/2020.11.15.383323v1>; A Yeager 'Immunity to SARS-CoV-2 Lasts at Least Six Months, Data Show' *The Scientist* (23 November 2020), accessed at <https://www.the-scientist.com/news-opinion/immunity-to-sars-cov-2-lasts-at-least-six-months-data-show-68179>. Prior to the above two studies, it appeared that the level of antibodies responsive to SARS-CoV-2 dropped off precipitously after several months. S Anand, M Montez-Rath, J Han et al. 'Prevalence of SARS-CoV-2 Antibodies in a Large Nationwide Sample of Patients on Dialysis in the USA: A Cross-Sectional Study' *The Lancet* (25 September 2020), accessed at [https://doi.org/10.1016/S0140-6736\(20\)32009-2](https://doi.org/10.1016/S0140-6736(20)32009-2) and [https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(20\)32006-7.pdf](https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(20)32006-7.pdf). The survey was conducted on more than 28 000 dialysis patients: they were easy to follow because they regularly have blood drawn and also have access to healthcare through Medicare. They also tend to be older and more likely to live in poverty: factors which have been identified as risk factors for COVID-19. Other large scale seroprevalence studies across the world – from Brazil to China to Italy to Spain to the United Kingdom – have been undertaken. All show extremely low seroprevalence of SARS-CoV-2 antibodies in communities hard hit by COVID-19. The difference in this study's construction is the consistency of the population and the ability to test that same population repeatedly over time. See, e.g., M Silveira, A Barros, B Horta et al. 'Population-Based Surveys of Antibodies against SARS-CoV-2 in Southern Brazil' (2020) 26 *Nature: Medicine* 1196. H Ward, C Atchison, M Whitaker et al. 'Antibody Prevalence for SARS-Cov-2 Following the Peak of the Pandemic in England: REACT2 Study in 100,000 Adults' (2020) *medRxiv* (published online 21 August 2020), accessed at <https://doi.org/10.1101/2020.08.12.20173690>. In sum, different parts of our immune system demonstrate greater efficacy when it comes to responding to SARS-CoV-2. That said, while it took less than a year to produce three vaccines for SARS-CoV-2 with high efficacy rates – where the stated goal of vaccines has been to eliminate infections – some vaccine manufacturers may have to acknowledge that these early vaccines might simply reduce hospitalisations. R Harris 'How Long Will Immunity to The Coronavirus Last?' *National Public Radio* (July 23, 2020), accessed at <https://www.npr.org/sections/health-shots/2020/07/23/894670842/>. However, with efficacy rates of 95%, Pfizer and Moderna – and AstraZeneca/Oxford at upwards of 90% – have the potential to stop the virus in its tracks.

<sup>211</sup> S Lunley et al. 'Antibody Status and Incidence of SARS-CoV-2 Infection in Health Care Workers' *The New England Journal of Medicine* (24 December 2020), accessed at <https://www.nejm.org/doi/full/10.1056/NEJMoa2034545>.

<sup>212</sup> S Mallapaty & H Ledford 'COVID-Vaccine Results Are on the Way – And Scientists' Concerns Are Growing' *Nature* (25 September 2020), accessed at <https://www.nature.com/articles/d41586-020-02706-6?>

optimistic and of relatively low probability.<sup>213</sup> As it turns out, recent medical advances, sufficient cooperation within the scientific community, and sizeable government support from developed nations to pharmaceutical manufacturers produced viable vaccines that fell well within the previously contemplated ‘magical thinking’ period of 18 months that had underlain the eminently reasonable and widespread belief that, according to Dr Peter J. Hotez, ‘We’re all going to [have to] hunker down for a while ... [until] the vaccine we need [becomes] available’.<sup>214</sup> That it had taken 20 years to create a vaccine for Ebola, that no vaccine had been produced faster than the four years required for mumps, and that viruses such as herpes and HIV had escaped all attempts to limit their transmission for over 40 years justifiably tempered expectations within the medical/scientific establishment.<sup>215</sup> In April 2020, Donald McNeil wrote: ‘Until a vaccine or another protective measure emerges, there is no scenario, epidemiologists agree, in which it is safe for that many people to suddenly come out of hiding.’<sup>216</sup> The World Health Organization issued a more dire alert: Humanity will have to live with the threat of coronavirus ‘for the foreseeable future’ and adapt accordingly *because there is no guarantee that a vaccine can be successfully developed*.<sup>217</sup> However, as a result of recent advances and significant government support for several novel biotechnologies, ‘cautious optimism’ became the new catchphrase as early as July and August 2020 (promoted in part by Dr Anthony Fauci, the well-respected director of the US National Institute for Allergies and Infectious Disease). Even vaccine veterans such

<sup>213</sup> S Thompson ‘How Long Will a Vaccine Really Take?’ *The New York Times* (30 April 2020), accessed at <https://www.nytimes.com/interactive/2020/04/30/opinion/coronavirus-covid-vaccine.html>.

<sup>214</sup> Scientific breakthroughs can be breathtaking – but quite variable when it comes to the time it requires for their realisation. It took a century for astronomers to see what Einstein’s equations had – to his own consternation – predicted: a black hole with visible evidence of an event horizon. It took almost 20 years to develop the vaccine for Ebola and receive approval for widespread use (on 19 December 2019). ‘First FDA-Approved Vaccine for the Prevention of Ebola Virus Disease, Marking a Critical Milestone in Public Health Preparedness and Response’ *US Food and Drug Administration Press Releases* (19 December 2019), accessed at <https://www.fda.gov/news-events/press-announcements/first-fda-approved-vaccine-prevention-ebola-virus-disease-marking-critical-milestone-public-health>. However, the novel delivery system behind the Ebola vaccine does hold out some promise for the development of a broad spectrum vaccine for SARS-CoV-2. L Gross, E Lhommea, C Pasina, L Richerta & RThiebaut ‘Ebola Vaccine Development: Systematic Review of Pre-Clinical and Clinical Studies, and Meta-Analysis of Determinants of Antibody Response Variability after Vaccination’ (2018) 74 *International Journal of Infectious Diseases* 83; H Branswell ‘“Against All Odds”: The Inside Story of How Scientists across Three Continents Produced an Ebola Vaccine’ *Stat* (7 January 2020), accessed at <https://www.statnews.com/2020/01/07/inside-story-scientists-produced-world-first-ebola-vaccine/>. Mumps – the gold standard for development – took four years. All proving Mark Twain, at least partially correct when he quipped ‘History never repeats itself, but it sometimes rhymes.’ Each of these vaccine developments constituted breakthroughs – but whereas human beings look for regularities and established patterns, paradigm shifts in science don’t quite work that way. In 2020, we got smart and lucky.

<sup>215</sup> L Dropulic & J Cohen ‘The Challenge of Developing a Herpes Simplex Virus 2 Vaccine’ (2012) 11(12) *Expert Review of Vaccines* 429, accessed at <https://doi.org/10.1586/ErV.12.129>; M Johnston & A Fauci ‘An HIV Vaccine – Challenges and Prospects’ (2008) 359 *New England Journal of Medicine* 888, accessed at <https://www.nejm.org/doi/full/10.1056/nejmp0806162>.

<sup>216</sup> D McNeil ‘Coronavirus in America: The Year Ahead’ *The New York Times* (18 April 2020), accessed at <https://www.nytimes.com/2020/04/18/health/coronavirus-america-future>.

<sup>217</sup> ‘Don’t Bet On Vaccine to Protect Us from Covid-19, Says World Health Expert’ *The Guardian* (18 April 2020) accessed at <https://www.theguardian.com/world/2020/apr/18/dont-bet-on-vaccine-to-protect-us-from-covid-19-says-world-health-expert>.

as Prompetchara, Ketlo and Palaga conceded that: ‘International collaboration as well as technology transfer between experts [would] help [and did help] SARS-CoV-2 vaccines’ efforts attain “warp speed” development.’<sup>218</sup> *This much I know.*

Fourth. Consistent with a pathbreaking study out of India that debuted in *Science* in June 2020, the fatality rate (not our infection rate) in South Africa is likely to be somewhat lower than that of more developed nations because the number of living septuagenarians and octogenarians – with their generally weaker immune systems – is far lower.<sup>219</sup> The study (of 85 000 cases and 600 000 contacts) revealed that children are indeed susceptible to high levels of infection and responsible for (near)adult levels of transmission. However, of far great import for South Africa, the study should shape our understanding of our slightly lower fatality rates. India recorded fewer deaths in the cohort of persons over the age of 65:

Age-specific COVID-19 mortality was lower in Tamil Nadu and Andhra Pradesh compared with the United States, consistent with the lower reported incidence of disease. While COVID-19 mortality trended upward across ages in the two Indian states, mortality plateaued at ages  $\geq 65$  years, in contrast to observations in the United States where COVID-19 mortality reached 69.6 deaths per 10,000 individuals ages  $\geq 85$  years; this observation was consistent with the relatively lower incidence of disease at the oldest ages within the two Indian states.<sup>220</sup>

In short, both South Africa and India have very similar age-demographic profiles. People aged 60 and above constitute a substantially lower portion of India and South Africa’s overall population. Of those who do live to a more advanced age, they tend toward being wealthier and able to secure access to far better levels of health care and thus experience lower fatality rates. No fancy, unsupported, hypotheses are required to explain why the following propositions remain true:

- South Africa has a lower actual fatality rate as compared to more developed nations in which the elderly have proven to be far more susceptible to serious infection and death;
- Discovery Health, with the assistance of the South African Medical Research Council, correctly assessed the number of infected adults at roughly 13 million as of 24 August 2020;<sup>221</sup>
- The Minister of the Department of Health, Dr Zwelie Mkhize, found himself forced to admit that the actual number was, indeed, at least 12 million<sup>222</sup> as of August 2020

<sup>218</sup> E Prompetchara, C Ketlo & T Palaga ‘Immune Responses in COVID-19 and Potential Vaccines: Lessons Learned from SARS and MERS Epidemic’ (2020) 38 *Asian Pacific Journal of Allergy and Immunology* 1, accessed at <https://doi.org/10.12932/AP-200220-0772>. The authors also explained why they believed a vaccine might arrive more expeditiously than in the past. Fame and money: Within two months of the SARS-CoV-2 outbreak, at least 37 biopharmaceutical companies or academic sectors entered the race to develop the prophylactic vaccine by using several platforms including mRNA, DNA, adenoviral vector and recombinant protein.

<sup>219</sup> R Laxminarayan, B Wahl, SR Dudala & K Gopal ‘Epidemiology and Transmission Dynamics of COVID-19 in Two Indian States’ (2020) *Science* (published online 29 September 2020), accessed at <https://science.sciencemag.org/content/early/2020/09/29/science.abd7672>.

<sup>220</sup> *ibid.*

<sup>221</sup> ‘Discovery Data Points to a Worrying and Potentially Deadly Trend in South Africa’ *BusinessTech* (9 September 2020), accessed at <https://businesstech.co.za/news/lifestyle/432762/discovery-data-points-to-a-worrying-and-potentially-deadly-trend-in-south-africa/>.

<sup>222</sup> G Imray ‘South Africa Says 12 Million ‘Probably’ Had Coronavirus’ *Associated Press* (16 September 2020), accessed at <https://apnews.com/article/>

(although he and other government officials did not act on those numbers with a change in policy that might stem transmission and a second surge); and

- The number of fatalities was deemed by the SA Medical Research Council, in August 2020, to be 3.1 times the official state COVID-19 mortality count.

*This much I know.*

What is also crystalline clear is the government's abject failure – as already delineated in this Prologue – across so many political, economic, legal and economic spheres. First, it botched its commitment to adopt the reflexive, feedback mechanism public health plan that tied all the alert levels (from 5 to 1) to internationally followed best practice – known as 'The Hammer and The Dance' – and to which it had signed on in March 2020. Second, it neglected to make a significant effort to engage in testing, tracing and isolating. Third, it betrayed the people of South African by failing to do *anything* to prepare South African hospitals for a surge that it acknowledged in March that it could not handle. Fourth, the South African government cooked the books on the actual numbers on infection and brazenly dropped testing to no more than 7 000 to 8 000 COVID-19 tests over many days in August 2020,<sup>223</sup> when they had been provided properly with epidemiological figures that they acknowledged to be as high as 12 million infections. Fifth, an autocratic government by fiat decision to move rapidly to Level 1 denied average citizens the ability to conform their behaviour to the actual threat posed by the first and second surges of the virus. Sixth, the government abdicated entirely its responsibility to educate the public on the medical/scientific basis for the pandemic so that the public could understand the risks that they might have to take, rather than simply following the government's deceptive 'death march' lowering of levels (sans the provision of solid evidence). Seventh, because the government failed to educate and prevent – with justifiable restrictions (not irrational regulations) – 60 million citizens from acting as if the return to normal at Level 1 (where people could socialise without restriction) meant they no longer needed to take any precautions, citizens justifiably followed the government's lead and behaved as though the pandemic posed no danger. Eighth, the government failed to act in a manner designed to blunt the first surge in July/August 2020 and, more importantly, to act with alacrity – given the Health Minister's late acknowledgement on 9 December 2020 that a second surge was ripping through at least four provinces. The 28 December 2020 speech by President Ramaphosa arrived three official weeks and two normal months too late. Ninth, the government flopped when it came to its most basic responsibility by failing to protect adequately the citizens of the country from the second surge and only acted after the story of South Africa's healthcare collapse had made the front page of major newspapers across the world. Tenth, again, the President and his government failed to stem transmission by waiting almost three weeks to go from Level 1 back (six months) to Level 3 (which will not diminish transmission). He then had the temerity to blame the individual citizens of this country for a problem created by the President himself, who then took the rest of South Africa into one of Ed Yong's death spirals. *All this, I know.*

Fifth. Advances in basic critical care treatment (from placing severely ill patients in a supine position, to the use of high dose supplemental oxygen, to the efficacy of

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virus-outbreak-health-cape-town-africa-south-africa-cffcd4dfb1e3cbd810838fb9bde7a91d.

<sup>223</sup> 'COVID-19 in South Africa Dashboard' *News24*, accessed at <https://covid-19dashboard.news24.com/>.

a fairly cheap steroid – dexamethasone<sup>224</sup>) correlates with a drop in the percentage of fatalities in hospitals that possess adequately trained nurses and other frontline healthcare workers.<sup>225</sup> Unfortunately, as I noted at the outset of this work, South Africa cannot count on *adequately* trained nurses to follow simple instructions on patient positioning and monitoring. An embarrassing report in *The New York Times* in late December 2020 told the following story of a completely unnecessary death at a field hospital in Port Elizabeth staffed by a single doctor and a dozen nurses:

On rounds, Dr. Du Preez stopped at the bed of a 60-year-old patient, a grandmother and former college counselor. Her oxygen tube had detached while she was lying prone, but the nurses had so many patients they hadn't noticed. Now, she was gone.<sup>226</sup>

But we knew that we lacked the skilled nurses back in March 2020, the government subsequently conceded so in August 2020, and yet when the second surge hit, the nurses hadn't been trained to undertake the most *de minimis* levels of treatment: supine position, continuous flow of oxygen, dexamethasone if available. I almost died in 2017 because an ICU nurse at Rosebank Hospital left her post at my bedside (her only task) and my high dose oxygen supply got cut off for ten minutes before I untangled the tubing from the

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<sup>224</sup> Dexamethasone (cortisone that is cheap and six times as powerful as prednisone) initially appeared to demonstrate efficacy in extreme critical care and intubation cases. H Ledford 'Coronavirus Breakthrough: Dexamethasone is First Drug Shown to Save Lives: In a Large Trial, a Cheap and Widely Available Steroid Cut Deaths by One-Third Among Patients Critically Ill With COVID-19' *Nature – News* (23 June 2020), accessed at <https://www.nature.com/articles/d41586-020-01824-5>; D Levine 'Can Dexamethasone Help Some Covid-19 Patients?' *US News & World Report* (7 July 2020), accessed at <https://health.usnews.com/conditions/articles/how-does-dexamethasone-help-covid-19-patients-with-severe-lung-disease>. Dr Ravin says: 'It does not act directly on the virus but rather can modulate the body's response to infection.' But see J Carlet, D Payen & S Opal 'Steroids for Sepsis and ARDS: This Eternal Controversy Remains with COVID-19' *The Lancet* (9 October 2020), accessed at [https://doi.org/10.1016/S0140-6736\(20\)32132-2](https://doi.org/10.1016/S0140-6736(20)32132-2). Corticosteroids (dexamethasone, 6 mg per day) caused a moderate but significant 11% reduction in mortality. Mortality was significantly reduced in patients who were mechanically ventilated (29%) or received oxygen (11%). On its own, dexamethasone disappoints. However, the authors of this study failed to acknowledge that a combination of therapies might prove to be more efficacious than any single intervention. This author improved – within a week – from an acute, severe respiratory attack when treated with dexamethasone, extended high level supplies of oxygen, prednisone and antibiotics in conjunction with one another. Indeed, such learning has led to a decreasing percentage of COVID-19-related fatalities, even as new cases around the world accelerate and countries experience massive second and third waves through the end of November 2020.

<sup>225</sup> 'Death Rates Have Dropped for Seriously Ill Covid Patients' *The New York Times* (29 October 2020), accessed at <https://www.nytimes.com/2020/10/29/health/Covid-survival-rates.html>. Early on, physicians were placing patients on mechanical ventilators to assist with their breathing; over time they learned to position patients on their stomachs and provide them with supplemental oxygen through less invasive means, and postpone ventilation or avoid it altogether if possible. By mid-June, clinical trials in England had proven that treatment with a cheap steroid drug, dexamethasone, reduced deaths ... in patients getting supplemental oxygen by one-fifth. Frontline healthcare practitioners also found that adequate access to hospitals with properly trained nurses and the necessary medicine and equipment – all generally better in urban and suburban areas than rural environments – had a significant effect on patient outcomes. See also 'COVID-19 Treatment Protocols: Corticosteroids' *National Institute of Health* (3 November 2020), accessed at <https://www.covid19treatmentguidelines.nih.gov/immune-based-therapy/immunomodulators/corticosteroids/>.

<sup>226</sup> S Fink 'As Virus Resurges in Africa, Doctors Fear the Worst Is Yet to Come' *The New York Times* (26 December 2020), accessed at <https://www.nytimes.com/2020/12/26/world/africa/africa-coronavirus-pandemic.html>.

railing. That's not my only tryst with incompetent nurses in South Africa (and I get the 'good' ones). I can attest to the lack of skilled nurses at every putatively top-end private healthcare hospital. My nurse had one job while I slept: to watch me so that nothing in her power could go wrong. Instead, she disappeared to the tearoom to chat with other nurses for an hour. Naturally, Netcare refused to admit any culpability for creating a Potemkin Hospital in Rosebank. And since I had suffered no harm, I had no claim to press, even as I pressed the administrators to train their nurses to some level of competency (and ensure that a doctor was present in the ICU). Of course, I'm fortunate. Unlike the woman who died in Port Elizabeth because of atrocious nursing, I survived long enough to write this book.

Whatever our healthcare system's weaknesses may be, even limited specialised nurse training in COVID-19 patient care *shouldn't* be out of our reach. But that would take a dedicated effort from a state loathe to do much of anything. Do doctors currently have any extra tricks in their satchel? The answers are rather grim.

- *Not* Remdesivir – serious questions have been raised regarding its efficacy and efficiency.<sup>227, 228</sup>
- *Not* Monoclonal-Antibody Therapy Treatment – a truly negligible difference from placebo, and at a cost of \$145 000 per saved life.<sup>229, 230</sup>

<sup>227</sup> J Beigel et al. 'Remdesivir for the Treatment of Covid-19 – Final Report' *New England Journal of Medicine* (8 October 2020), accessed at <https://www.nejm.org/doi/full/10.1056/NEJMoa2007764>:

Those who received remdesivir had a median recovery time of 10 days ... as compared with 15 days among those who received placebo ... [T]he patients who received remdesivir were found to be more likely than those who received placebo to have clinical improvement at day 15 ... [R]emdesivir was superior to placebo in shortening the time to recovery in adults who were hospitalized with Covid-19 and had evidence of lower respiratory tract infection.

'Cipla Gets Ready to Bring COVID-19 Treatment to South Africa' *Cipla News*, accessed at <https://www.cipla.co.za/cipla-news/cipla-gets-ready-to-bring-covid-19-treatment-to-sa/>.

<sup>228</sup> R Dal-Ré, R Banzi S Gorgin-Lavialle, R Porcher, R Sofat, M Zeitlinger et al. 'Remdesivir for COVID-19 in Europe: Will It Provide Value for Money?' *The Lancet: Respiratory Medicine* (17 December 2020), accessed at [https://www.thelancet.com/journals/lanres/article/PIIS2213-2600\(20\)30568-3/fulltext](https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(20)30568-3/fulltext):

The Solidarity trial was done in 405 hospitals in 30 countries, assessing different drugs versus standard of care. The interim results from 5451 participants randomly allocated to a 10-day course of remdesivir or standard of care *found no effect on mortality* (rate ratio [RR] 0.95 [95% CI 0.81–1.11]), *the need to initiate artificial ventilation, or time to discharge*. Pooling the Solidarity trial results with RCTs that had a control group receiving placebo or standard of care, resulted in RR of 0.91 (95%CI 0.79–1.05) of death from any cause. At best, remdesivir would prevent only a small proportion of all deaths. Further, the RR for death was 0.80 (0.63–1.01) in patients at low risk (not requiring ventilation) and 1.16 (0.85–1.60) in patients at higher risk (requiring ventilation), suggesting that remdesivir might provide a small benefit in mortality only when given to hospitalised patients not requiring ventilation. In this meta-analysis the absolute risk reduction in mortality in patients at low risk was 1.6% (8.6% in control group, 7.0% in remdesivir group), corresponding to a number needed to treat of 62.5; as a result *the costs for public health systems would be \$146 250 per life saved*.

<sup>229</sup> M Kinch 'Oh, the Frustration of Antibodies!' (2020) *ACS Pharmacology & Translation Science* (25 September 2020), accessed at <https://doi.org/10.1021/acpts.0c00138>. (Emphasis added)

<sup>230</sup> L DeFrancesco 'COVID-19 Antibodies on Trial' (November 2020) 38 *Nature: Biotechnology* 1242, accessed at <https://doi.org/10.1038/s41587-020-0732-8> (Emphasis added); 'An Update on Covid-19 Treatments: Monoclonal-Antibodies-Conalescent Plasma and Other Promising Developments' *Johns Hopkins Bloomberg School of Public Health Updates* (22 November 2020), accessed at <https://www.jhsph.edu/covid-19/articles/an-update-on-covid-19-treatments-mono-clonal-antibodies-conalescent-plasma-and->

• More treatment modalities as more data are shared, compiled, sifted and analysed.<sup>231</sup> Thus, as Ed Yong notes, after 10 months in which almost the entire medical and biological science establishment put down their normal research to engage COVID-19 (whether they knew anything about viruses or not) and engaged in all sorts of experiments and trials to treat the illness, here's what we've got in severe cases: altering the patient's position to supine, using high dose oxygen and dexamethasone (which works 20% to 25% of the time).<sup>232</sup> That's not just a mediocre result based upon the inestimable, unprecedented amount of research that has gone into fighting the pandemic. On its face, it's truly execrable. But that's only if you fail to take into account the amount of hurried and 'bad' science that this pandemic has produced and the point made by most members of the medical community who had already long worked in immunology or virology before the onset of the pandemic: *viruses are extremely difficult to tame. We got lucky. Maybe. So much depends on variants of a virus that may prove difficult to tame.*

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other-promising-developments.html. See also H Kuchler 'Regeneron Halts Trial of Antibody Treatment in Seriously Ill Covid Patients' *Financial Times* (25 October 2020), accessed at <https://www.ft.com/content/42256a8d-0073-4f57-9ac4-d3cc65a8e5c0?>

Regeneron has stopped enrolling seriously ill Covid-19 patients in a clinical trial of [its] antibody treatment ... [A]n independent data monitoring committee warned that the risks might outweigh the benefits for hospitalised patients on high levels of oxygen. The move comes after Eli Lilly ... stopped its trial in hospitalised patients earlier this week, when it found this group was unlikely to benefit. The antibody treatment may still be used in mild to moderate cases.

<sup>231</sup> Still more treatment modalities remain to be explored as data is sifted – often by supercomputers. For example, another promising modality has yet to be tested on COVID-19 patients or volunteers. A genetic analysis of 40 000 genes from 17 000 samples from COVID-19 patients produced 2.5 billion genetic combinations that revealed a link between virtually all of the wide array of symptoms associated with COVID-19 – and Bradykinin storms:

The [Bradykinin] hypothesis provides a model that explains many aspects of Covid-19, including some of its most bizarre symptoms. It also suggests 10-plus potential treatments, many of which are already FDA approved.

T Smith 'A Supercomputer Analyzed Covid-19 – and an Interesting New Theory Has Emerged: A Closer Look at the Bradykinin Hypothesis' *Elemental* (1 September 2020), accessed at <https://elemental.medium.com/a-supercomputer-analyzed-covid-19-and-an-interesting-new-theory-has-emerged-31cb8eba9d63>.

The initially slow uptake of this fascinating insight may be because a supercomputer generated the findings. For now, the double-blind review of the hypothesis appears only in a journal devoted to computational analysis of biological systems. M Garvin et al. 'A Mechanistic Model and Therapeutic Interventions for COVID-19 Involving a RAS-Mediated Bradykinin Storm' (2020) 9 *eLife* e59177, accessed at <https://doi.org/10.7554/eLife.59177>.

M Anderson 'We Are Finally Unravelling the Mystery of What Causes Severe Covid-19' *New Scientist* (8 September 2020), accessed at <https://www.newscientist.com/article/2253987-we-are-finally-unravelling-the-mystery-of-what-causes-severe-covid-19/#ixzz6Xau0zAWf>. That this thesis has not been pursued may be a function of the enormous number of theories regarding the etiology of the COVID-19 illness, a lack of peer-reviewed proof and the limited amount of money available to track down the veracity of the huge number of hypotheses regarding what happens and why. Edward Yong describes the confusion and the vast number of dead ends in this narrow area of research as a function of distortion in the scientific enterprise: too many non-specialists have entered the COVID-19 arena in the hope that they may garner both fame and fortune – and also provide insight into the nature of the virus and the control of the pandemic. E Yong 'Never Have So Many Researchers Trained Their Minds on A Single Problem in So Brief a Time. Science Will Never Be the Same' *The Atlantic* (January/February 2020) 50.

<sup>232</sup> E Yong 'The COVID-19 Manhattan Project' *The Atlantic* (January/February 2021) 50, accessed at <https://www.theatlantic.com/magazine/archive/2021/01/science-covid-19-manhattan-project/617262/>.

If the South African state had discharged its public healthcare responsibilities from the outset, adhered to its own stated commitment to ‘The Hammer and the Dance’, and demonstrated that ‘Knowledge is empowering’<sup>233</sup> whilst still putting in place proper restrictions, then South Africa might not have experienced two COVID-19 tsunamis of its own making. Even as I conclude, the shift to Level 3 at the very end of December 2020 (born more of shame or a desire for increased social control, than an exercise in responsibility) will have done nothing to prevent or to stem the first or second surges. It’s difficult to assess what changes it will make now: just today, with restrictions widely known, an armed security guard came to the gate without a mask. Did my explanation of how virus particles linger in the air enable him to better understand the need to wear a mask? I don’t know. Given a basic resistance to following the science and an inability to follow the science, it’s impossible to know. The government has done no favours to its citizens, thus far. Level 3 at the end of December 2020 appears to be primarily a theatrical middle ground and an unspoken admission by the government that it has run out of money and options. How many people are going to be thrown into jail or fined R1 500 for failure to wear a mask? The country is broke, and the majority are living on the food poverty line. First, blaming the people for fatal lapses in judgment by the government, and second, threatening to use the jackboot of the state if they don’t immediately change their behaviour reflects rule by autocrats who care not a wit for the people they govern and have sworn to serve. The new regulations simply allow the economy to remain open while imposing a couple of restrictions on citizens without actually addressing the science of social distancing as we now know it in a country where social distancing is often impossible for a large percentage of the population.

Moreover, the government’s inaction and lassitude left it with little access to vaccines. After creating a R800 billion stimulus and relief package in which a lot of money did not move, the government could have easily committed a couple of billion to one of the more promising candidates – when whispers of ‘cautious optimism’ started to circulate. Not only did they miss two COVAX deadlines, but they didn’t even explore partnering with Aspen Pharmacare after it had secured an end of production agreement with Johnson & Johnson. Now, ‘[a]ccording to leaked internal documents, funding and supply concerns have placed COVAX, the global initiative to share coronavirus vaccines, at “very high” risk of failure.’<sup>234</sup> Thus, a belated payment to COVAX does not leave South Africa with a reliable source of a vaccine for even 10% of the population (what participation in COVAX promised). And here we have another good example of a critical feature of wicked problems: the absence of inclusive global political and economic institutions that exercise any capacity to solve wicked problems.

That’s enough good news, mixed with much less cheery assessments, about what *I know now*. It’s a pandemic after all, and in terms of response and understanding, we are

<sup>233</sup> Governor Andrew Cuomo *PBS News Hour: Hour Long Press Daily Conference on COVID-19* (1 April 2020), accessed at <https://www.youtube.com/watch?v=nPsQjC8t-Rk>. The lack of transparency or accountability of President Ramaphosa is truly shocking by comparison to Governor Cuomo. And it’s not like the South African Government could not see for themselves what best practices were around the world. Go back to the beginning of the book. They actually committed themselves to doing the right thing.

<sup>234</sup> T Bollyky & C Bown ‘Vaccine Nationalism Will Prolong the Pandemic’ *Foreign Affairs* (29 December 2020), accessed at <https://www.foreignaffairs.com/articles/world/2020-12-29/vaccine-nationalism-will-prolong-pandemic>.

a mere 12 months in. Given the rapid global transmission of the virus in a short space of time, and the absence of effective global political or economic institutions to manage this wicked problem, we are well and truly ... hobbled. We know far less about the virus than we will in a year – but that doesn't mean we cannot hazard an informed opinion about what might happen in the near term.

Despite the good news – and at least the somewhat greater than usual tendency of scientists to cooperate with one another – each step of the experimental process will remain labour intensive and politically fraught as it plays out across our colourful global stage of almost eight billion inhabitants in over 200 nations. Engaging this global pandemic (even with our current meagre arsenal of solutions) without effective global or multinational institutions is but one reason that it constitutes a wicked problem as defined at the outset of the book (and explained in greater length in Chapter II). Of course, the fact that SARS-CoV-2 seems less dangerous than a nuclear bomb doesn't mean it is so, even at this giddy period in late 2020 when medical science has given us a palpable hit. As authors in *Nature* warned in late September 2020: There's a host of good reasons to worry about the rush to produce a viable vaccine, or brace of vaccines, at scale and that are accessible to all.<sup>235</sup> Our primary watchwords should now be:

- poor public health governance, and a failure of leadership to set restrictions that actually curb dangerous behaviour and stem transmission, and to educate effectively a society as to why such limitations are necessary;
- weak social mores – and a concomitant lack of commitment to social distancing, mask wearing, sanitising and other means of protecting oneself and others;
- uncertainty regarding the long-term efficacy of natural and vaccination immunity;
- the extreme complexity of vaccine manufacture and production;
- the unequal access to vaccines between nations and within nations;
- the complex logistics of delivery and maintaining the cold chain within countries and around the world;
- the ongoing and erratic spread, the recurrent waves, and, most importantly, the new and more transmissible variants of the virus around the planet that may evade the protection of the vaccines that we have and those vaccines in the pipeline; and
- the likelihood of another pandemic within the next few years.

These concerns, amongst others, shall be our watchwords for some time. Why should we pay attention to each of the watchwords – and their explicit warnings?

First, we've witnessed the ongoing failure by many states, hardly unique to South Africa or the United States, to lead their citizenry through a large-scale natural disaster. Second, we've observed the lack of leadership on and messaging with respect to public health restrictions designed to reinforce social mores regarding the need to protect one another from infection. Kate Bingham, the chair of the United Kingdom's task force, issued the following warning:

The assumption at the moment is that we'll be shooting to get to a year's immunity ... What I've been anxious about is that people ... think we'll have a silver bullet. That's probably not going to happen. Even a two-dose vaccine might not last very long ... You may need to boost

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<sup>235</sup> S Mallapaty & H Ledford 'COVID-Vaccine Results Are on the Way – And Scientists' Concerns Are Growing' *Nature* (25 September 2020), accessed at <https://www.nature.com/articles/d41586-020-02706-6>?

[it] every year ... At minimum, we want to reduce symptoms, we want to stop people from dying. We have to accept that's maybe where we'll end up.<sup>236</sup>

The World Health Organization's chief scientist, Soumya Swaminathan stated that as of 28 December 2020, 'the agency had not established whether the COVID-19 vaccines being administered across the US and in Europe prevented people from getting the virus and passing it to others.'<sup>237</sup> Dr Swaminathan continued: 'At the moment I don't believe we have the evidence of any of the vaccines to be confident that it's going to prevent people from actually getting the infection and therefore being able to pass it on.'<sup>238</sup>

So given our limited grasp of humoral immunity – even if it seems better than it initially might have – and our limited understanding of how each vaccine will work or how long even the most efficacious vaccine will provide protection, it's worth keeping Dr Swaminathan's words and Dr Bingham's warnings in mind. Vaccines may have limited efficacy. The virus may prove elusive. But even in a best case scenario, for their words and warnings to be meaningful, both the state and its denizens must act accordingly – not as if it is at Level 1 (or 'Level 0') – as South Africa has through two surges of the virus – and with no meaningful attempt to get the transmission rate down to  $R < 1$ . With vaccines somewhere out on the horizon, it's easy to forget the ongoing necessity for social distancing: masks alone are not enough!<sup>239</sup> What will nations and people do? *I don't know.*<sup>240</sup>

Third. As to the myth of natural herd immunity – as an alternative to, rather than a function of, global vaccination – it would require (as a crazy speculative matter) at least 80% of the world's population (reasonably evenly spread), who have been infected, to develop long-term natural immunity.<sup>241</sup> A September 2020 issue of *JAMA* contained the following 'tease' of a passage:

Substantial data now demonstrate the presence of preexisting T-cell immunity to SARS-CoV-2 in blood donors either prior to the COVID-19 pandemic or more recently among those without infection. Memory CD4+ T cells are found in higher frequencies than are CD8+ T cells, and these likely represent responses induced by previous infection with other human endemic *betacoronaviruses* known to cause the common cold. Such T cells can recognize known or predicted epitopes within the nucleocapsid (N protein) and spike structural proteins as well as the nonstructural proteins (NSPs), NSP7 and NSP13. SARS-CoV-2 reactive T cells

<sup>236</sup> A Gross "Silver Bullet" to Beat Covid-19 Unlikely, Warns UK Vaccine Chief *Financial Times* (29 July 2020), accessed at <https://www.ft.com/content/f63f9e25-a291-4871-9d4b-2fcf93c4969e?>.

<sup>237</sup> T Colson 'Top WHO Scientist Says Vaccinated Travelers Should Still Quarantine, Citing Lack of Evidence That COVID-19 Vaccines Prevent Transmission' *Business Insider* (28 December 2020), accessed at [https://www.businessinsider.com/who-says-no-evidence-coronavirus-vaccine-prevent-transmissions-2020-12?utm\\_source=notification&utm\\_medium=referral](https://www.businessinsider.com/who-says-no-evidence-coronavirus-vaccine-prevent-transmissions-2020-12?utm_source=notification&utm_medium=referral).

<sup>238</sup> *ibid.*

<sup>239</sup> 'Masks Alone Are Not Enough to Stop the Spread' *The New York Times* (19 November 2020), accessed at <https://www.nytimes.com/article/coronavirus-masks.html>: 'The experts all emphasized that mask use is just one tool that can slow the pandemic. Social distancing, ventilation and hand hygiene are also important.' The problem is that people – unlike physicians – are not trained to undertake the precautions necessary to preclude contraction or transmission of illness. The lack of training – or even understanding of the restrictions – makes consistent transmission preventive behaviour difficult to maintain, save for the use of authoritarian measures.

<sup>240</sup> Unless you live in two worlds – as I do – and will have access to a vaccine sometime in early to mid-2021.

<sup>241</sup> C Aschwendin 'The False Promise of Herd Immunity for COVID-19' *Nature* (21 October 2020), accessed at <https://www.nature.com/articles/d41586-020-02948-4>. (Emphasis added)

are also seen in household contacts of patients infected with SARS-CoV-2, and future studies may determine if cross-reactive T cells from previous coronavirus infections have been boosted with exposure to SARS-CoV-2.<sup>242</sup>

It remains a tease 'til we know more:

[R]elying on population-based natural immunity, especially for populations at risk of greater disease severity, *is not wise*. Boosting specific neutralizing antibodies and T<sub>H</sub>1 immunity to high levels *with an effective vaccine* regardless of prior immune status may further protect these individuals;<sup>243</sup> [while] COVID-19 vaccines designed to prevent clinical infection, disease severity, or both show the induction of an anamnestic immune response to the spike protein with a second dose and can generate high levels of neutralizing antibodies comparable with or greater than those seen in sera samples from patients.<sup>244</sup>

In short, don't count on high levels of infection to solve our COVID-19 pandemic problems. South Africa already had roughly 13 million infections in late August 2020 before a second wave was ushered in by late October 2020, accelerating exponentially through December 2020. It's not unimaginable that we could clear 50% at some juncture in the near future. But I have no idea, nor am I equipped to even speculate what reaching a threshold of 80% of people who have been infected might mean for South Africa. It does sound downright Malthusian, however.<sup>245</sup> *I don't know*.

Fourth. Access. As we have already noted above, even before viable vaccines came to market and suggested that they might provide reasonably long-term immunity,<sup>246</sup> the issue of who receives any vaccine garnered widespread attention. The investment and purchase commitments by advanced economies – from China to the United States, from the United Kingdom to the European Union, from Singapore to South Korea – would appear to ensure that the citizens in those countries will secure (some) access to any given successful vaccine before others. Developing nations will be placed at a distinct disadvantage unless they either cooperate – through a WHO initiative on the verge of failure, COVAX, that may supply 10% of a country's vaccinations needs – and receive partial help from nations in the developed world.

Enlightened self-interest should motivate wealthier nations to assist poorer nations if they wish to stamp out the COVID-19 pandemic. As long as it swirls around the planet, the virus poses an imminent threat even to countries able to vaccinate their own rather early on. As a result, the Serum Institute in India – the firm which produces by far the most vaccine vials per annum (1.5 billion) – has committed itself to the production of hundreds of millions of vaccines – half for India, and half for the rest of the world. At the

<sup>242</sup> D Stephens & J McElrath 'COVID-19 and the Path to Immunity' (2020) *Journal of the American Medical Association* (published online 11 September 2020), <https://doi.org/10.1001/jama.2020.16656> accessed at [https://jamanetwork.com/journals/jama/fullarticle/2770758?utm\\_](https://jamanetwork.com/journals/jama/fullarticle/2770758?utm_)

<sup>243</sup> *ibid.*

<sup>244</sup> *ibid.*

<sup>245</sup> It's not all that different than our HIV policies two to three decades ago – Malthusian, though far, far less deadly this time around – cold comfort for the ill.

<sup>246</sup> H Kuchlar & A Gross 'Scientists Raise Questions over Lasting Immunity from Covid-19 Vaccine' *Financial Times* (16 July 2020), accessed at <https://www.ft.com/content/2aec0597-1de3-4181-93a0-1da9483d8b26>:

Vaccines present antigen differently than natural infection and use different adjuvants [chemical boosters], therefore there is no reason to assume the immune memory will be the same with vaccines as with natural infection.

same time, it has warned of the long delays. These delays could mean that it takes several years to vaccinate all the world's inhabitants – or just enough.<sup>247</sup> But, as further discussed in Chapter II, the creation and the distribution of vaccines for viral-induced pandemics is not just a national problem of collective action; it is a wicked problem that requires global political and economic cooperation (without the political or economic institutions to mediate disputes).<sup>248</sup>

A second question surrounding access to a successful vaccine turns on the cost of initial doses (as well as booster shots) at affordable price points. For the developed world, fairly high price points from \$20 to \$35 per initial vaccination will play no role in their rollouts – though AstraZeneca/Oxford's vaccine comes in at a mere \$4. (However, as of January 2021, both the FDA and EU rejected AstraZeneca's trial data on the basis that it contained a 'serious error.')

What we do know is that up until recently, South Africa has had no contractual arrangements with anyone for a vaccine. Johnson & Johnson only signed an end of production bottle and fill arrangement with Aspen Pharmacare, SA. South Africa came rather late to the COVAX party, but it's not clear what this initiative will mean for various participants and their ability to source individual vaccines at a given time. But the COVAX public document is, understandably, rather vague given the WHO's limited powers and finances, and an inability to predict what will happen a month or more from now. Again, by January 2021, the effort is said to be on the verge of failure. Worse still, South Africa not only missed the first deadline to join this initiative with a downpayment in November 2020. It then missed the second deadline for a deposit in December 2020.<sup>249</sup> It's hard to explain the government's failure to make rather small payments to join at least one important vaccine initiative. The government finally pulled its head out of its ass and made the 15% down payment a few days after the December deadline.<sup>250</sup> AstraZeneca/Oxford has promised to produce the vaccine at cost for developing nations (after fulfilling its obligations to those (developed) countries for which it has guaranteed contractual

<sup>247</sup> A lack of global cooperation, international investment in vaccines and unequal healthcare resources led Adar Poonawalla, the CEO of India's giant generic manufacturer, the Serum Institute, to issue the following warning:

It's going to take four to five years [the end of 2024] until everyone gets the vaccine on this planet ... [he] estimated that if the Covid-19 shot is a two-dose vaccine – such as measles or rotavirus – the world will need 15bn doses.

J Gettleman 'Indian Billionaires Bet Big on Head Start in Coronavirus Vaccine Race' *The New York Times* (1 August 2020), accessed at <https://www.nytimes.com/2020/08/01/world/asia/coronavirus-vaccine-india.html?action>.

<sup>248</sup> 'Least Favoured Organization – The WTO's Outgoing Boss Leaves Behind a Hobbled Body – Roberto Azevêdo Departs in a Worsening Climate for International Trade' *The Economist* (30 August 2020), accessed at [https://www.economist.com/finance-and-economics/2020/08/30/the-wtos-outgoing-boss-leaves-behind-a-hobbled-body?utm\\_](https://www.economist.com/finance-and-economics/2020/08/30/the-wtos-outgoing-boss-leaves-behind-a-hobbled-body?utm_).

<sup>249</sup> 'South Africa Misses Covax Deadline to Secure Vaccines' *Polity* (17 December 2020), accessed at <https://www.polity.org.za/article/south-africa-misses-covax-deadline-to-secure-vaccines-2020-12-17>.

<sup>250</sup> The National Department of Health and the Solidarity Fund finally paid the outstanding down payment for entry into COVAX of R238 million on 22 December 2020. As the joint statement between the government and the fund makes clear, the down payment itself does not secure access to any vaccine:

Covax has confirmed SA's entry to the facility. The down payment represents 15% of the total cost of securing access to vaccines for 10% [roughly 6 million] of the population. The country's membership in the Covax facility ensures that SA receives its equitable share of the vaccine once it becomes available, the department and fund said in a joint statement on Tuesday.

arrangements). China's efforts cannot be ignored. State-owned Sinopharm claims 79% efficacy – but it has released no information and has yet to receive even state approval within China. Of course, China has 1.4 billion arms to inject – twice. That's almost three billion doses. Even if it wields its authoritarian state's ability to pivot toward a single goal, providing for its own will take some time. That said, vaccine diplomacy would advance China's broader global aims.

What does that all mean for the countries on the outside looking in? *I don't know.*

Fifth. The next difficulty stems from the limits of the global *cold* supply chain since most vaccines need to remain frozen or refrigerated for long periods of time. Assuming that a properly outfitted Boeing 777 could move a million double-doses at a time, we'd require 8 000 retrofitted cargo planes.<sup>251</sup> Maybe fewer. The demand for a massive product launch and distribution network arrived just as the global pandemic has created a significant downturn in transportation infrastructure:

'We're not prepared,' Neel Jones Shah, global head of air carrier relationships at San Francisco-based freight forwarder Flexport ... 'Let's all be honest here, vaccine supply chains are exponentially more complex than PPE supply chain,' ... referring to personal protective equipment like surgical masks and gloves. 'You can't ruin PPE by leaving it on the tarmac for a couple of days. You will destroy vaccines.'

Wasted vaccines because of breaks in the cold supply chain are a common public health concern across the developing world.<sup>252</sup> Solutions take an immense amount of creativity and cooperation between generally impoverished and poorly governed polities, NGOs and local communities willing to change the kinds of habits that inhibit public health in the developing world, and which require a great deal of education and buy-in to overcome.<sup>253</sup>

However, not all players in the global cold supply chain feel inhibited by the current recession. If anything, international delivery outfits such as DHL, Fedex and UPS see this global attempt to ensure that all are inoculated as a win-win: do good, and make good.<sup>254</sup> But while large cargo jets might do the trick, refrigeration is another matter. They don't operate in the same manner – as specialised as they are. If rural hospitals in often poor rural areas around the United States cannot afford ultra-cold freezers for the vaccine rollout, what might be said for equally poor or extremely poor nations around the world?<sup>255</sup> I don't know who will get the vaccine over 'that last mile' and who will be able to maintain the

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'SA Pays R283m Deposit to Secure Access to Covid-19 Vaccines' *Sunday Times* (22 December 2020), accessed at <https://www.timeslive.co.za/news/south-africa/2020-12-22-sa-pays-r283m-deposit-to-secure-access-to-covid-19-vaccines/>.

<sup>251</sup> B Murray & R Griffin 'The World's Supply Chain Isn't Ready for a Covid-19 Vaccine' *Bloomberg News* (25 July 2020), accessed at <https://www.bloomberg.com/news/articles/2020-07-25/the-supply-chain-to-save-the-world-is-unprepared-for-a-vaccine>.

<sup>252</sup> C Sprague & S Woolman 'VidaGas: Delivering Better Health to Northern Mozambique with LPG' (2011) *5 Journal of Enterprising Communities: People and Places in the Global Economy* 41.

<sup>253</sup> *ibid.*

<sup>254</sup> C Bryant 'DHL, FedEx and UPS Are Ready to Save the World' *Bloomberg News* (10 November 2020), accessed at <https://www.bloomberg.com/opinion/articles/2020-11-10/covid-vaccine-dhl-fedex-and-ups-are-ready-to-save-the-world>: 'The logistics industry faces a mammoth task to safely deliver billions of vaccine doses. Those shipments could further juice the industry's profits.'

<sup>255</sup> O Goldhill 'We're Being Left Behind': Rural Hospitals Can't Afford Ultra-Cold Freezers to Store the Leading Covid-19 Vaccine' *StatNews* (11 November 2020), accessed at <https://www.Statnews.com/2020/11/11/Rural-Hospitals-Cant-Afford-Freezers-To-Store-Pfizer-Covid19-Vaccine/>.

cold chain once it gets there. Or once it gets here.<sup>256</sup> Clicks has entered negotiations with the government regarding distribution – and they certainly have the existing networks to serve a large percentage of South Africans. How they manage the vaccination process? *I don't know.* (But it's a good recipe for social chaos and violence.) Of those tens of millions who live up the last unpaved rural mile. *I don't know.* Who will pay for all of this? *I don't know.*

Sixth. A final threat to a successful distribution of a new regime of vaccines? Mutations. Several new strains have already appeared in Europe and South Africa – and new zoonotic jumps may yet appear. As the WHO and vaccine manufacturers have noted, new strains of the virus could undermine the success of existing vaccines or others in the pipeline.<sup>257</sup> In December 2020, new strains two of SARS-CoV-2 appeared in the United Kingdom and South Africa. Given the rapid transmissibility of the new variant within a mere two months, the British government noted that it had risen to 62% of all tested cases: “It is becoming the dominant variant; it is beating all the others in terms of transmission,” the U.K. government’s top scientific adviser said.<sup>258</sup> While the United Kingdom must grapple with having an embargo placed on movements of people and goods into Europe – further crushing its economy – several other conclusions can be drawn. One is that the transmission rate of this variant could be 70% higher than prior variations – according to modelling analysis – thereby increasing infection rates (while the fatality remains stable (for now) due to improved treatment protocols as compared to April 2020).

In South Africa, ‘a similar (new) variant has been identified in 90% of samples analyzed’.<sup>259</sup> That’s a highly transmissible mutation. However, it should come as no surprise – given what we have seen over the last nine months from both the government and the general population – that scientists have thus far concluded that ‘human behavior [is] driving [this second wave of infections], not new mutations whose effect on

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<sup>256</sup> N Thukwana ‘Clicks in Talks with Government to Distribute Covid-19 Vaccines’ *Business Insider SA* (8 December 2020), accessed at <https://www.businessinsider.co.za/clicks-in-talks-with-government-on-covid-19-vaccine-distribution-2020-12>.

<sup>257</sup> E Hodcroft et al. ‘Emergence and Spread of a SARS-Cov-2 Variant through Europe in the Summer of 2020’ (2020) *medRxiv* (25 October 2020), accessed at <https://doi.org/10.1101/2020.10.25.20219063>:

A variant of SARS-CoV-2 emerged in early summer 2020, presumably in Spain ... at frequencies above 40% since July. Outside of Spain, the frequency of this variant has increased from very low values prior to 15th July to 40–70% in Switzerland, Ireland, and the United Kingdom in September. It is also prevalent in Norway, Latvia, the Netherlands, and France ... [T]his variant was exported from Spain to other European countries multiple times ... *It is currently unclear whether this variant is spreading because of a transmission advantage of the virus or whether high incidence in Spain followed by dissemination through tourists is sufficient to explain the rapid rise in multiple countries.* (Emphasis added)

‘Denmark’s COVID-19 Mutation Leads to New Restrictions’ Reuters (5 November 2020), accessed at [2020-11-05-denmark-covid-19-virus-mutation-leads-to-new-restrictions/](https://www.reuters.com/article/2020-11-05-denmark-covid-19-virus-mutation-leads-to-new-restrictions/):

Health officials made the announcement as a lockdown was imposed on much of Denmark’s western peninsula of Jutland, home to most of the country’s mink production. Denmark is now in talks with the World Health Organization amid concerns the mutant strain found in the animals may derail efforts to develop a vaccine against Covid-19. (Emphasis added)

<sup>258</sup> A Herman ‘SARS-CoV-2 Variants in U.K., South Africa Cause Alarm’ *New England Journal of Medicine Journal Watch* (20 December 2020), accessed at <https://www.jwatch.org/fw117348/2020/12/20/sars-cov-2-variants-uk-south-africa-cause-alarm>.

<sup>259</sup> *ibid.*

transmissibility had yet to be quantified.<sup>260</sup> South Africans led by a duplicitous government simply followed one another over the edge like lemmings. Will the new regulations issued on 28 December 2020 – when the government made masks and other social distancing requirements mandatory – alter public behaviour? *I don't know.*

I do know this: South Africa is not a country in which the law is readily internalised as social mores. However, without access to a vaccine any time soon, the government and its citizens would do well to take responsibility for themselves and the wellbeing of all South Africans – and follow the science – or at least just wear a mask that covers both the nose and the mouth (and not the chin).

Thus far, the scientific community has not reached a clear agreement on what the variant – with its rather large number of 23 mutations – means for severity of illness or fatality. Some believe that the variation should not pose a graver risk than current variants and should not escape the vaccines slowly being rolled out.

Other scientists hold a quite different perspective. 'It's a real warning that we need to pay closer attention,' said Jesse Bloom, an evolutionary biologist at the Fred Hutchinson Cancer Research Center in Seattle. 'Certainly these mutations are going to spread, and, definitely, the scientific community – we need to monitor these mutations and we need to characterize which ones have [deleterious] effects.'<sup>261</sup> Similarly, Kristian Andersen, director of infectious disease genomics at Scripps Research Institute in California, said, 'I have seen many articles stating: "no effect on immunity or vaccines or clinical features." That is not correct ... The fact is we don't know but we will in coming weeks.'<sup>262</sup> In addition, writes William Banks, author of an important new study on the virus's ability to breach the blood–brain barrier:

We know that when you have the COVID infection you have trouble breathing and that's because there's infection in your lung, but an additional explanation is that the virus enters the respiratory centers of the brain and causes problems there as well,' said Banks ... As for people taking the virus lightly, Banks has a message: 'You do not want to mess with this virus ... Many of the effects that the COVID virus has could be accentuated or perpetuated or even caused by virus getting in the brain and those effects could last for a very long time.'<sup>263</sup>

Thus, a mutation that increases transmission rates could, quite easily, have long-term effects on those infected and are asymptomatic or have mild to moderate or severe cases. Since we have already seen Long COVID – and other deleterious and debilitating effects of the virus on all major systems of the body – we ignore a highly transmissible variant at our own peril. The effect of the virus on the central nervous system is of particular concern.<sup>264</sup> As a

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<sup>260</sup> *ibid.*

<sup>261</sup> A Mandavilli 'The Coronavirus Is Mutating. What Does That Mean for Us?' *The New York Times* (20 December 2021), accessed at <https://www.nytimes.com/2020/12/20/health/coronavirus-britain-variant.html>.

<sup>262</sup> C Cookson 'Scientists Alarmed at Spread of Covid Mutant' *Financial Times* (20 December 2020), accessed at <https://www.ft.com/content/a0bef737-c763-447a-b1f3-0649dc5989a0>.

<sup>263</sup> "You Do Not Want to Mess With This Virus" – Research Strongly Suggests COVID-19 Virus Enters the Brain' *University of Washington Health Sciences/UW Medicine* (18 December 2020), accessed at <https://scitechdaily.com/you-do-not-want-to-mess-with-this-virus-research-strongly-suggests-covid-19-virus-enters-the-brain/>.

<sup>264</sup> E Rhea, A Logsdon, K Hansen, L Williams, M Reed, K Baumann, S Holden, J Raber, W Banks & M. Erickson 'The S1 Protein of SARS-Cov-2 Crosses The Blood–Brain Barrier in Mice' *Nature Neuroscience* (16 December 2020), accessed at <https://www.nature.com/articles/s41593-020-00771-8>:

result, the potential negative downstream effects could be quite substantial. Concentrating on just its relationship to current vaccines misses the bigger picture: hundreds of millions of people – think India alone or couple it with South America and the United States – will become infected before vaccines and other treatment modalities arrive.

The market responded with irrational exuberance on news of viable vaccines. Having reached dizzying heights, the stock market has created a bubble.<sup>265</sup> Indeed, the bubble looks like that of the tech bubble that burst in 2001 (and cost me a well remunerated job at an old finance/new technology boutique law firm). To paraphrase Paul Krugman: The markets are not science. And science is not the markets. That's just money chasing more money. But a market crash during a pandemic will not help tattered economies across the world to recover. Will the current market bubble burst if vaccines prove unreliable? *I don't know*. What of the about the next pandemic? Bill Gates doesn't know – but like this author, he had predicted this outbreak, and his words should carry weight.<sup>266</sup> With respect to all questions related to variations, mutations and the next pandemic, the answer is: *I don't know*.

If the next pandemic is as close as the next three years, a probability Bill Gates does not rule out, how many hobbled nations will be prepared? I don't know for certain. But this pandemic has knocked Latin America backwards two decades in term of its battle against extreme poverty – and threatens to kill 600 000 people by April 2021.<sup>267</sup> It has crushed our economy – and growth depends a great deal on confidence and the multiplier effect of

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Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is responsible for the coronavirus disease 2019 (COVID-19) pandemic. In addition to pneumonia and acute respiratory distress, COVID-19 is associated with a host of symptoms that relate to the CNS, including loss of taste and smell, headaches, twitching, seizures, confusion, vision impairment, nerve pain, dizziness, impaired consciousness, nausea and vomiting, hemiplegia, ataxia, stroke and cerebral haemorrhage. It has been postulated that some of the symptoms of COVID-19 may be due to direct actions of the virus on the CNS; for example, respiratory symptoms could be in part due to SARS-CoV-2 invading the respiratory centres of the brain. Encephalitis has also been reported in COVID-19 and could be a result of virus or viral proteins having entered the brain. SARS-CoV-2 mRNA has been recovered from the cerebrospinal fluid, suggesting it can cross the blood–brain barrier (BBB). Other coronaviruses, including the closely related SARS virus that caused the 2003–2004 outbreak, are able to cross the BBB, and SARS-CoV-2 can infect neurons in a BrainSphere model. However, SARS-CoV-2 could induce changes in the CNS without directly crossing the BBB, as COVID-19 is associated with a cytokine storm, and many cytokines cross the BBB to affect CNS function. Here we assess whether one viral protein of SARS-CoV-2, the spike 1 protein (S1), can cross the BBB. This question is important and clinically relevant for two reasons. First, some proteins shed from viruses have been shown to cross the BBB, inducing neuroinflammation and otherwise impairing CNS functions. Second, the viral protein that binds to cells can be used to model the activity of the virus; in other words, if the viral binding protein crosses the BBB, it is likely that protein enables the virus to cross the BBB as well.

<sup>265</sup> M Phillips 'Market Edges Toward Euphoria, Despite Pandemic's Toll' *The New York Times* (26 December 2020), accessed at <https://www.nytimes.com/2020/12/26/business/investors-bull-market-pandemic.html>: 'Investors of all stripes piled into stocks this year, creating levels of froth reminiscent of the dot-com boom. Analysts say there's room to go higher, but some worry about a bubble.'

<sup>266</sup> W Gitten 'Bill Gates Predicts When the Next Pandemic Will Arrive' *AS Espanion* (24 November 2020), accessed at [https://en.as.com/en/2020/11/24/latest\\_news/1606228590\\_532670.html](https://en.as.com/en/2020/11/24/latest_news/1606228590_532670.html): When asked about when the next pandemic would arrive, Gates responded as follows: 'Hopefully it could be 20 years from now ... but we must assume it could be 3 years from now ...'

<sup>267</sup> 'Latin America and the Caribbean: Impact of COVID-19' *Congressional Research Service* (17 December 2020), accessed at <https://fas.org/sgp/crs/row/IF11581.pdf>:

money circulation through an economy. If people hoard and don't spend, then economies don't grow, old jobs are not restored and new jobs are not created. Would you bet on it being a very few, or rather, quite a lot of nations that are hobbled for a number of years? South Africa has already conceded the damage and the irreparable damage done.<sup>268</sup> Again: I don't know – but we can guess.

While talk of a vaccine has made many quite bullish, this section should place a brake on any 'irrational exuberance'. *We got lucky!* (Maybe!) As noted above, the prior record for a stable vaccine was four years – for mumps. Forty years later, we still do not have a vaccine for HIV (or an STD that affects 25% of the population, herpes.) Scientists working (in collaboration, or at least greater openness), buttressed by funding from a variety of governments in the developed world, produced a minor miracle – something most prognosticators in the early months of 2020 could not foretell. Are new treatment modalities and more effective vaccines against variants in the offing? We saw how little has been produced thus far. So the answer is: *I don't know*.

While many of the answers to many questions surrounding COVID-19 'seem' evenly split between I don't know and I do know, with respect to three big questions we do

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A University of Washington COVID-19 projection model forecasts deaths in Latin America and the Caribbean could reach more than 646,000 by April 1, 2021 ... Before the pandemic, the International Monetary Fund (IMF) projected 1.6% economic growth for the region in 2020; in its October 2020 forecast, the IMF projected an 8.1% economic contraction for the region, with almost every country in recession. Economic recovery may be a protracted process in countries that rely heavily on global trade and investment. Caribbean nations that depend on tourism face deep economic recessions, several with projected gross domestic product declines well over 10% in 2020, according to the IMF. Likewise, several South American nations hard hit by the pandemic are projected to register economic contractions over 10%.

<sup>268</sup> A Toozee 'Talk of a Global Economic Reset Must Not Ignore Grim Realities: Scientists May Have Provided Us With a Miraculous Fix for Covid, But History Shows That Any Path to Recovery Will Be Long' *Financial Times* (19 December 2020), accessed at <https://www.ft.com/content/5834df03-d8d4-456a-b08f-fa2ee0203141?desktop>:

With the arrival of vaccines, we *may* be able to tame coronavirus through mass inoculation, but that will not shield us from the wider consequences of our failure or simply reset us to pre-pandemic prosperity. Too often when we think of historical 'restarts' – whether Franklin Roosevelt's New Deal of the 1930s, the 1944 Bretton Woods conference that underpinned so much of our system of global economic governance, the Marshall Plan to kick start postwar recovery, or the UK's own postwar welfare state – we remember the sunny highlights while ignoring the bombed-out, exhausted, contentious, financially stretched background from which reconstruction was launched. In 2021, the aftermath of the pandemic may not be as bad as that. But it is going to be tough – and we should recognise that now if we want to have any hope of making a sustained recovery. The pandemic has greatly intensified existing inequality. In the US this winter, millions face unemployment and destitution. The social crisis in Europe, so far contained by furlough schemes and emergency loans, is only just beginning. Businesses in their tens of thousands have gone under. Not only is Brexit likely to cause more chaos in January, but national lockdowns around the world have thrown the global trading system out of sync. Mountains of containers are piled up in the wrong places. In the poorest parts of the world hundreds of millions face intensifying hunger. And supervening all that is the largest surge in public debt since the war. We cannot count on rapid growth to help us pay that debt. Nor will inflation come to our rescue to eat away at its real value ... We, by contrast, are heirs to the collapse of Bretton Woods in the 1970s. The money in which today's governments owe their debts is fiat money: in other words, they make it themselves ... How we choose to handle this fragile equilibrium poses the most important decision facing global economies as we look for paths to recovery. The answer will be a test of our politics as telling, in its own way, as the response to the pandemic itself. There will be those who are uncomfortable with this fact.

know the answers. First, we got lucky with a few early vaccines, but our understanding of the virus and its ability to mutate and to evade vaccines remains in its incipient stages. Scientists may have responses to some future problems, and not to others. Second, not only have most domestic political and economic institutions failed to respond adequately to the pandemic (when we had a clear blueprint for a basic response), we clearly lack institutions for global governance that will enable all 200 nations and eight billion human inhabitants to undertake the necessary coordination of inclusive political and economic institutions required to embark on new experiments (scientific and social), make other informed political choices and convey them clearly and openly to us. Finally, we must ask whether such institutions will appear anytime soon? The answer to that question I can assert, with the strongest possible conviction, is ‘No.’ In this world of rough justice and COVID-19, and after reading the above account of where we are in December 2020 (an account subject to dramatic change), you ought to ask yourself the following question, first posed by Clint Eastwood in *Dirty Harry*:

I know what you’re thinking: ‘Did he fire six shots or only five?’ Well, to tell you the truth, in all this excitement, I’ve kinda lost track myself. But being this is a .44 Magnum, the most powerful handgun in the world, and would blow your head clean off, you’ve got to ask yourself one question: ‘Do I feel lucky?’ Well, do you, punk?

## H. How COVID-19 Accelerates Permanent Technological Unemployment

### *How one predictable wicked problem accelerates another wicked problem*

This Prologue is not meant to displace the remainder of the book. Its rather awkward placement simply reflects the extent to which the COVID-19 pandemic has *accelerated* a long-awaited global recession, the discharge or furlough of large numbers of workers<sup>269</sup> as well as the original primary subject matter of this work – permanent technological unemployment. Its movement from the predictively accurate penultimate November 2019 conclusion, or un-burying it from Chapter II’s discussion of wicked problems, serves the more writerly purpose of capturing the reader’s attention with a wicked problem of which they have immediate experience and legitimate long-term fear.

Some features of COVID-19 as a wicked problem have been dealt with here, and may seem somewhat familiar given the extended definition offered at the outset of the book. How COVID-19 satisfies the desiderata for and the nomenclature on wicked problems and why it accelerates several other wicked problems are taken up in far greater detail in Chapter II. While a large number of authors have welcomed this pandemic’s tragic moment and the likelihood of permanent economic damage as an opportunity to ‘right the ship’, one should first try to understand the challenges of this critical historical juncture – as Arendt would recommend – as well as the chance that it will continue to go sideways.

South Africa has hobbled itself. What should not be (and will not have been) lost in this account is that South Africa had already entered 2020 in both political and economic distress. The toxic mix of the two meant that not only did the pre-pandemic state struggle

<sup>269</sup> B Milanovic ‘The World is Becoming More Equal: Even as Globalization Hurts Middle-Class Westerners’ *Foreign Affairs* (28 August 2020), accessed at [https://www.foreignaffairs.com/articles/world/2020-08-28/world-economic-inequality?utm\\_](https://www.foreignaffairs.com/articles/world/2020-08-28/world-economic-inequality?utm_). Although the pandemic threatens to reverse progress made on eliminating extreme poverty – adding 67 million to the current total – the middle classes have already begun to shoulder most of the effects of globalization.

to produce the most basic public goods, it also could not provide sufficient basic sustenance to 30% of the population living at or below the food poverty line. It's troubling, but not surprising, that, under such circumstances, the close-to-failed state prioritised the economy over public health concerns. The larger 'book' on South Africa is troubling, but far from closed. Time is tight, and not on our side. As noted above, domestic and international analysts have already described South Africa as a failed state or a state that will fail in the most profound ways before the decade is out. Chapter V suggests interventions designed to enable us 'to do the best that we can' and right the most basic wrongs.

### *Post-COVID-19 redundancy and permanent technological unemployment*

The state's decision to open up the economy, while the transmission rate of SARS-CoV-2 continued to climb, created an incentive for businesses to increase the amount of automation, AI and other disruptive technologies that they use in order to remain solvent.<sup>270</sup> With such an increase comes permanent technological unemployment. Thus, even if we begin a meaningful rebound in 2022 or 2023, we can expect perpetual redundancy. If we look at the last three global recessions, they all presaged major moves toward automating relatively simple jobs: 88% of jobs lost involved routine, automatable tasks.<sup>271</sup> As Bill Walsh writes:

Adopting robots and AI [can] keep businesses going during social distancing and reduce the health risk to human workers. But with unemployment already at Great Depression levels, many of the jobs lost to automation might never be regained.<sup>272</sup>

Walsh's examples should be as alarming for South Africa as they are for the United States. Brain Corp, a San Diego-based company that develops software for use in autonomous cleaning robots, reports its customers are employing robots about 13% more than they were in the months before the pandemic. The autonomous cleaners 'can do basic cleaning tasks 'so that workers can use their time to do essential sanitation,' says Phil Duffy, Vice President of Innovation: 'Robots are something a lot of our customers are looking at now, and it's making a big difference.'<sup>273</sup>

Simbe Robotics produces an autonomous shelf-scanning robot called Tally that can audit inventory at grocery stores through computer vision and machine learning. That's particularly useful for food markets as they struggle to keep products on the shelf during the disruption of the pandemic, notes Brad Bogolea, Simbe's CEO.<sup>274</sup> It's a particularly dangerous development for South Africa, assuming retailers take both customer and employee safety seriously.

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<sup>270</sup> As the institutional analysis in Chapters II and V suggests, those societies with some degree of inclusivity can move toward or away from extractive arrangements.

<sup>271</sup> N Jaimovich & H Siu 'Job Polarization and Jobless Recoveries' *Working Paper 18334, National Bureau of Economic Research* (November 2018), accessed at <http://www.nber.org/papers/w18334>.

<sup>272</sup> B Walsh 'Coronavirus Speeds the Way for Robots in the Workplace' *Axios* (25 April 2020); 'Europeans – Especially Germans – Are Visiting More Businesses Online, More Often Than Ever' *McKinsey & Co* (November 4, 2020), accessed at <https://www.mckinsey.com/featured-insights/coronavirus-leading-through-the-crisis/charting-the-path-to-the-next-normal/europeans-especially-germans-are-visiting-more-businesses-online-more-often-than-ever?>: The COVID-19 pandemic has pushed more European consumers and industries online.

<sup>273</sup> N Jaimovich & H Siu 'Job Polarization and Jobless Recoveries' *Working Paper 18334, National Bureau of Economic Research* (November 2018), accessed at <http://www.nber.org/papers/w18334>.

<sup>274</sup> *ibid.*

Fetch Robotics employs a cloud platform that allows for the rapid deployment of robots in warehouses and similar facilities. With fewer human workers on the job because of social distancing, essential businesses ‘need robots to help make up the difference,’ says Melonee Wise, Fetch’s CEO.<sup>275</sup>

If past is prologue, then a recent piece by Hershbein and Kahn paints a rather sombre picture of COVID-19 and post-COVID-19 economies. Their 2017 article reviewed 100 million job posts online before and after the 2008 recession and concluded that companies in hard-hit areas replaced employees performing routine tasks with a mix of technology and more skilled workers.<sup>276</sup>

Carl Frey identifies another sore point for South Africa: low-income jobs will be particularly vulnerable to automation. As a result, he writes: ‘Automation and digital technologies are exacerbating social cleavages and could be a source of unrest for years to come.’<sup>277</sup> Amazon, for example, may have missed Q1 targets – but it still posted dividends of 5.01 per share, hired roughly 100 000 new workers, and expects more than \$4 billion in earnings in Q2.<sup>278</sup> Those numbers explain a massive expansion of automated retail and service and a doubling of the firm’s market capitalisation – making it the world’s first \$2 trillion company.

Of course, Amazon’s pleasure is every retailer’s pain. Reports of retail’s death may be greatly exaggerated. However, Amazon’s increased profits during the COVID-19 pandemic has often come at many a small business owner and cashier’s pain. Why pay a cashier the minimum wage (plus benefits) when a customer can merely swipe a card when finished shopping? As many predicted when Amazon purchased Whole Foods in 2017,<sup>279</sup> Amazon has begun to eat their Whole Foods’ cashiers.<sup>280</sup> Amazon, despised though it may

<sup>275</sup> *ibid.*

<sup>276</sup> B Hershbein & L Kahn ‘Do Recessions Accelerate Routine-Biased Technological Change? Evidence from Vacancy Postings’ (2017) 108 *American Economic Review* 1737.

<sup>277</sup> C Frey ‘Covid-19 Will Only Increase Automation Anxiety’ *Financial Times* (21 April 2020), accessed at <https://www.ft.com/content/817228a2-82e1-11ea-b6e9-a94cfd1d9bfuttm>.

<sup>278</sup> L Fiener ‘“If You’re a Shareowner in Amazon, You May Want to Take a Seat” – Amazon Reports Earnings, Plans To Spend All Q2 Profits on Coronavirus Response’ *CNBC News* (1 May 2020), accessed at <https://www.cnbc.com/2020/04/30/amazon-amzn-q1-2020-earnings.html>.

<sup>279</sup> D Thompson ‘Why Amazon Bought Whole Foods: The Retailer’s \$14 Billion Bet Isn’t Just about the Future of Food. It’s about the Future of Commerce – Especially for Rich Urban Consumers’ *The Atlantic* (16 June 2017), accessed at <https://www.theatlantic.com/business/archive/2017/06/why-amazon-bought-whole-foods/530652/>:

The purchase holds implications for the future of groceries, the entire food industry, and – as hyperbolic as this might sound – the future of shopping for just about anything ... Amazon always seems to be not just several moves ahead of its competitors, but playing another game entirely – chess versus checkers, as they say – so it’s worth thinking through some of the more long-term, hypothetical implications of this deal ... Amazon understands that the most important value in American retail today is what’s technically known as ‘consumer convenience’ and what is commonly observed as ‘human sloth.’ E-commerce is soaring and food-delivery businesses are taking off because human beings are fundamentally lazy and they don’t want to leave the couch to buy stuff.

<sup>280</sup> C Miller ‘Amazon’s Move Signals End of Line for Many Cashiers’ *The New York Times* (17 June 2020), accessed at <https://www.nytimes.com/2017/06/17/upshot/amazons-move-signals-end-of-line-for-many-cashiers.html>; J Del Rey ‘Amazon is Opening a Supermarket with No Cashiers. Is Whole Foods Next?’ *Vox* (25 February 2020), accessed at <https://www.vox.com/recode/2020/2/25/21151289/new-amazon-go-grocery-store-supermarket-cashiers-whole-foods-seattle>:

be, is hardly the first business to dispense with cashiers.<sup>281</sup> Large supermarket chains and pharmacies in the United States have dispensed with most cashiers for the better part of the last decade.<sup>282</sup> Large retailers have followed suit in the United Kingdom.<sup>283</sup>

But there's reason (for readers) to be even more worried about the COVID-19 and the post-COVID-19 economies. White collar professionals – including sessional and tenured academic staff – will likely see significant cuts (which they largely, but not entirely, avoided after the 2008/9 recession):

Tej Parikh, an economist at the Institute of Directors, warned that office-based professions are facing the worst jobs crisis since the early 1990s recession, threatening the livelihoods of many workers after three decades of job security. Many of these roles depended on a vibrant economy. 'These were important jobs before Covid but may now be seen as areas to cut costs,' Mr Parikh said, referring to middle management or administrative jobs. But restructuring experts said the cuts to white-collar positions were likely to be broader, with most employers looking at their costs after a bruising few months of trading.<sup>284</sup>

Already under pressure, universities in a COVID-19 era must confront a number of discrete pressures that, when combined, may alter significantly their business model and their ability to survive. In some instances, the cost of a degree, with attendant indebtedness, makes attendance a risky proposition. In other cases, universities have relied on foreign students to cover costs. COVID-19 related limitations on travel have eliminated a signal source of funding and resulted in job cuts amongst senior, tenured faculty members.

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[In February 2020], Amazon ... opened the doors to a 10,000-square-foot Amazon Go Grocery store in Seattle's Capitol Hill neighbourhood ... It [has been] stocked with 5,000 different products – from organic fruit to grass-fed beef – and outfitted with cameras, sensors, and computer vision that eliminate the need for shoppers to fork over cash or plastic before walking out the door with their groceries.

<sup>281</sup> 'Disruptions in Retail through Digital Transformation: Reimagining the Store of the Future' *Deloitte* (November 2017), accessed at <https://www2.deloitte.com/content/dam/Deloitte/in/Documents/CIP/in-cip-disruptions-in-retail-noexp.pdf>.

<sup>282</sup> J Rudd 'Checking Out Productivity in Grocery Stores' (December 2019) 8 *Beyond the Numbers: Bureau of US Labor Statistics*, accessed at <https://www.bls.gov/opub/btn/volume-8/checking-out-productivity-in-grocery-stores.htm>:

Once upon a time, customers walked in with a shopping list and someone else gathered items for them. Then customers had the convenience of walking the aisles with a list in hand, picking up items at their own pace. Later came self-checkout with some stores introducing scan and bag as you shop. Customers are being asked to do more for themselves while they are in the store and before they leave. Perhaps it is no surprise that some people have transferred the work of gathering standard grocery items to online shopping platforms—a form of personal shopping for a fee, of course. It is up to the customer to decide if the tradeoffs are worth it.

<sup>283</sup> S Provan 'M&S to Cut 7,000 Jobs over Next Three Months' *Financial Times* (17 August 2020), accessed at [https://www.ft.com/content/1ffab5b1-4e9f-493f-8470-f7832478f6d4?:](https://www.ft.com/content/1ffab5b1-4e9f-493f-8470-f7832478f6d4?)

Marks and Spencer has said it will cut 7,000 jobs over the next three months as the UK retailer overhauls its business in the latest sign of how the coronavirus pandemic has disrupted the high street ... The cuts to the group's 78,000-strong workforce follow recent reductions by department store chain John Lewis and pharmacy Boots. The pandemic has deepened problems for many retailers that were wrestling with the shift of consumers to online shopping.

<sup>284</sup> D Thomas & D Strauss 'UK Faces White-Collar Jobs Crisis as Pandemic Ends Decades of Job Security' *Financial Times* (18 August 2020), accessed at <https://www.ft.com/content/596e49d9-1283-47b3-a771-1c0beebd7df5>.

Combine both factors and the result is not just contraction – but in some cases collapse.<sup>285</sup> In addition, a disruptive technology not readily available during the 2008 shake-out – online learning – has led to blowback from parents who do not wish to pay extravagant and not so extravagant fees. For example, Wesleyan University would not have been Wesleyan University if my classes had been streamed to the bedroom that I shared with my brother in my parents' apartment in Tenafly, New Jersey. To the extent that tertiary institutions are dependent upon the state, as they are in South Africa, only magical thinking would lead one to conclude that most jobs are secure. Academics who have experienced years of cuts to research funds will now be faced with a severely contracting fiscus in 2021. While some job cuts may be avoided, the price for collective security would have to be a significant reduction in pay for everyone – especially those who occupy positions at the top of the food chain. A 0% pay increase seems like a bonus.

The lack of alignment with what universities produce and what South African society requires is another matter. The Wits Law School attracts incoming classes of 600 students. While a significant portion fail to complete their degree, even those who do face a legal job market that cannot absorb all the graduates. The profession knows it. The law school knows it. But the university needs to find funds in a 'fee free' environment. The misalignment will continue – at least until both learners understand the market (and have the capacity to choose other degrees) and the university is forced to decide how to operate under significant economic constraints.

While the opening of malls after the lifting of Level 5 lockdown witnessed a significant amount of pent-up buying at outlets, the shoppers who keep malls and retail afloat are likely to limit their spending during a period of increased uncertainty about job security.<sup>286</sup> In addition, as the transmission of SARS-CoV-2 accelerated in South Africa, retail shops across the spectrum shifted to home delivery to enhance the security of customers. This shift eliminates redundant floor staff for stock assessment and pay points.

A recent Nielsen study into the impact of COVID-19 on consumer behaviour found that 37% of South Africans say they do more shopping online than before the pandemic. Gareth Paterson, part of the Nielsen South Africa study, said: 'Amid the strange new world of COVID-19, online grocery shopping has been a lifeline for many South African consumers, who have desperately sought out safe and secure shopping alternatives amid the uncertainty of lockdown living.'<sup>287</sup> Deloitte's broader study of retail in May 2020 revealed that:

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<sup>285</sup> E Grey 'Are Liberal Arts Colleges Doomed? The Cautionary Tale of Hampshire College and the Broken Business Model of American Higher Education' *The Washington Post* (21 October 2019), accessed at <https://www.washingtonpost.com/magazine/2019/10/21/downfall-hampshire-college-broken-business-model-american-higher-education/?arc404=true>.

<sup>286</sup> V Friedman 'The Death of the Department Store: Very Few Are Likely to Survive' *The New York Times* (21 April 2020), accessed at <https://www.nytimes.com/2020/04/21/business/coronavirus-department-stores-neiman-marcus.html>.

<sup>287</sup> P Larkin 'Huge Surge in Online Essential Shopping' *The Independent Online* (1 May 2020) accessed at <https://www.iol.co.za/personal-finance/my-money/huge-surge-in-online-essential-shopping-47383471>.

COVID-19 has fast-tracked the need for digital transformation in retail, highlighting the necessity to operate and serve customers differently. Retailers need to adjust how they approach customer experience, employees, supply chain and category management, as well as hygiene.<sup>288</sup>

However, despite the efficacy and safety of online shopping, the South African government initially limited e-commerce use because it ostensibly competes with spaza shops. The state's logic strains credulity since the two forms of food retailers service different clientele. It also assumes that creative spaza shop owners are incapable of using cell phones or other media to communicate with potential customers. In a now commonplace turn of events, the government – in the form of the NCCC – reversed itself on this score shortly after the President's 13 May 2020 announcement regarding the move to Level 3 at the end of May 2020. Reversal of orders by NCCC fiat had previously occurred when the government realised that its ban on cigarettes merely created a criminal underground only too happy to supply contraband in high demand.

But retail shopping is not the only sector set to benefit from AI automation. Manufacturing could follow suit at a similar rate. MusashiAI, a joint venture between Musashi Seimitsu of Japan (a Honda Motor Corp. affiliate) and SixAI Ltd. of Israel announced that 'it's now selling an autonomous visual quality control inspector and an autonomous forklift driver.'<sup>289</sup> The inspectors are especially attractive because:

[a]n advanced form of deep learning which parallels the way the human brain absorbs and assimilates information was developed, making redeploying and switching robots between tasks much easier. These improvements are central to MusashiAI's latest robotic models, which the company anticipates will be essential in the many socially-distanced industrial settings to come.<sup>290</sup>

As for the forklifts:

[L]ogistics tasks previously limited to human forklift drivers can now be autonomously performed by the robots and that they 'exceed modeled expectations with their unparalleled efficiency, cost-effectiveness, and safety standards'.<sup>291</sup>

Reskilling such machines is far more cost-effective and far less disruptive than retooling persons. Of course, MusashiAI paints the usual rosy picture of eliminating human drudgery and even health concerns when it notes that:

[g]lobally, *nearly 30 million people work in grueling visual inspection jobs* ... Many of these people suffer chronic health conditions from this work, such as carpal tunnel syndrome. No doubt a large number of them have been furloughed because many industrial settings are unsafe now due to the coronavirus. These people are not key workers, but what they do is essential. Businesses will need their final products inspected, and we are offering the world a solution which can shield employees from this deadly virus and the chronic health problems

<sup>288</sup> Deloitte. *How COVID-19 has affected South African Grocery Retail Consumer Sentiment: Consumer insights pre- and during lockdown* (May 2020), accessed at [https://www2.deloitte.com/content/dam/Deloitte/za/Documents/za\\_Deloitte\\_BrandEye\\_Consumer-Sentiment-report\\_May%202020.pdf](https://www2.deloitte.com/content/dam/Deloitte/za/Documents/za_Deloitte_BrandEye_Consumer-Sentiment-report_May%202020.pdf).

<sup>289</sup> 'New Robotic Employees – Quality Control Inspector and Forklift Driver' *Industry Week* (27 July 2020), accessed at [https://www.industryweek.com/technology-and-iiot/article/21137632/new-robotic-employees-quality-control-inspector-and-forklift-driver?utm\\_](https://www.industryweek.com/technology-and-iiot/article/21137632/new-robotic-employees-quality-control-inspector-and-forklift-driver?utm_).

<sup>290</sup> *ibid.*

<sup>291</sup> *ibid.*

associated with their work, and the major economic danger of stalling business for much longer.<sup>292</sup>

As for the number of people ‘trapped in manual industrial jobs’ who might be liberated by autonomous forklifts, the company did not hazard a guess. The same forklift in the early 1980s ‘liberated’ me from the well-compensated manual labour that paid my way through college.

Enrico Ferigolli, of Bottles App, believes that consumers in South Africa (who can afford it) have embraced online shopping and that ‘customers will move from light users to heavy users’:

The lockdown and Covid forced a lot of people to try online ordering. A lot of these people were happy with what they received. The service was there when they needed it most, resulting in growth of three times more than it was before ... We have been given a time machine to see what the world will look like in 10 years’ time. This has eradicated the excuses for not putting plans in place to be prepared for what consumers want.<sup>293</sup>

We are also currently witnessing just how much more complex tasks AI can enable firms to undertake. It’s not just that we no longer need people to take inventory or require cashiers at the point of purchase. Novel software platforms no longer require people collaborating on complex tasks to be in the same place. The ability to work transnationally, without requiring people to be corporeally present, not only increases efficiency and speeds up problem-solving; it means that small- to medium-sized firms of experts need not exist in each and every jurisdiction. That, in turn, means that fewer experts may be required in a given industry if their expertise can be easily tapped on global e-platforms. In short, white-collar work will experience downward pressure under current conditions (even as it may increase productivity). As Total South Africa, a major multinational, has come to realise:

When a complex piece of equipment starts exhibiting unusual behaviors, it often takes a team of people to pinpoint the exact issue at hand. Naturally, timeliness is a crucial component to keeping costs down and equipment running. And, even within a large company like Total S.A., it is rare to have all the experts needed to accurately resolve a problem in the same location, at the same time. Instead, solving these problems usually requires collaboration.<sup>294</sup>

In the past, despite access to experts across the world, the time for diagnosis and repair would often be a long, drawn-out affair:

[A]n SME cannot see the internals of a reactor, as asking a lot of questions is the only way to ensure they are providing accurate advice. People in the field would feel like they were spending too much time answering questions and would only do so as they had time, which only extended the diagnosis process.<sup>295</sup>

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<sup>292</sup> *ibid.* (Emphasis added)

<sup>293</sup> ‘How The Pivot to E-Commerce is Impacting Commercial Property Investment’ *Daily Maverick* (9 August 2020), accessed at <https://www.dailymaverick.co.za/article/2020-08-07-how-the-pivot-to-e-commerce-is-impacting-commercial-property-investment/>. The accelerated adoption of e-commerce and supply chain innovation in a post-COVID-19 world is helping to reshape the commercial property sector in South Africa, especially when it comes to the ongoing growth of logistics real estate.

<sup>294</sup> P Fretty ‘Accelerating a Total Transformation: Major Energy Provider and Manufacturer Total Adds Spark to Digital Transformation with Realwear Headset’ *Industry Week* (27 July 2020), accessed at <https://www.industryweek.com/technology-and-iiot/article/21137563/realizing-a-total-transformation>.

<sup>295</sup> *ibid.*

Solutions to such delays are now readily at hand:

Total recently addressed this issue with the world's first commercial deployment of Microsoft Teams on RealWear in the energy industry at its La Porte Polypropylene plant in Texas. Clipped on to a hard hat, the RealWear device runs voice-enabled Microsoft Teams and empowers plant workers to use both hands for complex work procedures while remotely communicating in real time with subject matter experts wherever they are in the world.<sup>296</sup>

The new Microsoft Teams on RealWear not only creates a more efficient use of time and a more efficient solution. It also eliminates the need to have experts on hand, or relatively close to a location, to solve a problem. It should mean reliance on fewer local experts – and thus fewer white-collar jobs – wherever a given Total operation may be. White-collar experts will not be as readily retrenched as cashiers. However, the new technology does effectively eliminate the need for many experts to be nearby to resolve glitches and solve conundrums.<sup>297</sup>

These individual anecdotes actually form a rather compelling picture of permanent technological unemployment accelerated by the COVID-19 pandemic. However, according to Barrero, Bloom and Davis's May 2020 model, *the numbers are already in*. A combination of lockdowns and social distancing policies will result in a substantial shift in employment from standard brick and mortar retail and service positions, to jobs at already dominant e-commerce firms that require far fewer employees (42% fewer employees) to deliver the same goods and services:

Even if medical advances or natural forces bring an early resolution to the crisis, many pandemic-induced shifts in consumer demand and business practices will persist. Thus, much of the near-term reallocative impact of the pandemic will also persist, as indicated by our forward-looking reallocation measures. Drawing on our survey evidence and historical evidence of how layoffs relate to recalls, we estimate that 42 percent of recent pandemic-induced layoffs will result in permanent job loss. If the pandemic and partial economic shutdown linger for many months, or if pandemics with serious health consequences and high mortality rates become a recurring phenomenon, there will be profound, long-term consequences for the reallocation of jobs, workers and capital across firms and locations.<sup>298</sup>

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<sup>296</sup> *ibid.*

<sup>297</sup> Z LaRock *The Digital Health Ecosystem* (2019). While novel tele-medicine platforms can provide access to diagnosis and treatment across the world – especially in developing nations – the business drivers for its uptake encompass driving down operational costs, attracting new patients, offering convenience and personalized care and controlling the price of chronic disease management.

<sup>298</sup> J Barrero, N Bloom & S Davis 'COVID-19 is also a Reallocation Shock' *Working Paper No. 2020-59 Becker Friedman Institute, University of Chicago School of Business* (May 2020) 5. The Barrero, Bloom & Davis Working Paper's May 2020 predictions-cum-warnings find support in two different places. First, the US unemployment numbers out in November 2020 support their displacement predictions. N Irwin 'A Jobs Report Without Silver Linings: The November Numbers Offer Clues that What Was Once Temporary Unemployment is Becoming More Permanent' *The New York Times* (4 December 2020), accessed at [https://www.nytimes.com/2020/12/04/upshot/jobs-report-unemployment.html?:](https://www.nytimes.com/2020/12/04/upshot/jobs-report-unemployment.html?)

Even as the economy recovered, people had experienced various forms of damage. *Some people's skills became outdated*. But more generally, many people just lost a sense of attachment to the work force. It's much harder to find a job when you've been out of work for years than when you've been on a short-term layoff. (Emphasis added)

Second, the fact that Germans have increased online purchases by 28% during the pandemic buttresses the conclusion that buying practices have been altered rather permanently. This change will invariably affect the job market, which will likely experience significant displacement without

Tim O'Reilly offers an assessment similar to that of Bill Walsh. However, in O'Reilly's future-present, a world rife with displaced persons trying to survive pandemics and other wicked problems, people begin to appreciate (however grudgingly) the benefits of disruptive technologies: 'When human touch (or breath) can be deadly, it's time to create machines that can take over some healthcare functions to spare frontline medical practitioners from the risk of contact and contamination.'<sup>299</sup> A recent article in *Science Robotics* confirms the roles robots can fill in combating the COVID-19 pandemic:

Robots have the potential to be deployed for disinfection, delivering medications and food, measuring vital signs, and assisting border controls. As epidemics escalate, the potential roles of robotics are becoming increasingly clear. During the 2015 Ebola outbreak, workshops organized by the White House Office of Science and Technology Policy and the National Science Foundation identified three broad areas where robotics can make a difference: clinical care (e.g., telemedicine and decontamination), logistics (e.g., delivery and handling of contaminated waste), and reconnaissance (e.g., monitoring compliance with voluntary quarantines). Many of these applications are being actively explored in China, although in limited areas and many as proofs of concept. Frontline healthcare practitioners are still exposed to the pathogen with direct patient contact, albeit with protective gear. The COVID-19 outbreak has introduced a fourth area: continuity of work and maintenance of socioeconomic functions. COVID-19 has affected manufacturing and the economy throughout the world. This highlights the need for more research into remote operation for a broad array of applications requiring dexterous manipulation – from manufacturing to remotely operating power or waste treatment plants.<sup>300</sup>

Tech-augmented medical apps have arrived in South Africa and offer some promise of COVID-19 control:

Event ticketing and cashless platform Howler has developed Keep.Out.Covid, an app and suite of tools, that helps with temperature checks, symptom diagnosis, information collection and the flagging of employees that are at risk of having Covid-19. 'Through Keep.Out.Covid, South Africans will get to screen themselves from the comfort of their home, fill in the symptoms questionnaire and instantly be notified if they are at risk or not,' said Tahl Evian, who developed the solution using Howler's tech platform.<sup>301</sup>

If robots can kill COVID-19 with ultraviolet light, and help monitor symptoms and track outbreaks, a chance exists, however unlikely it may seem, that our fear of the machines that displace us might just dissipate, especially under conditions that diminish personal contact. While this pandemic may be the worst in 100 years, it most certainly will not be

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reinstatement. 'Europeans – Especially Germans – Are Visiting More Businesses Online, More Often Than Ever' *McKinsey & Co* (4 November 2020), accessed at <https://www.mckinsey.com/featured-insights/coronavirus-leading-through-the-crisis/charting-the-path-to-the-next-normal/europeans-especially-germans-are-visiting-more-businesses-online-more-often-than-ever?>

<sup>299</sup> T O'Reilly 'Robotics to the Rescue' *Next Economy* (5 May 2020), accessed at [https://www.oreilly.com/nexteconomy/newsletter.html?utm\\_](https://www.oreilly.com/nexteconomy/newsletter.html?utm_).

<sup>300</sup> G Yang, B Nelson, R Murphy, H Choset, H Christensen, S Collins, P Dario, K Goldberg, K Ikuta, N Jacobstein, D Kragic, R Taylor & M McNutt 'Combating COVID-19 – The Role of Robotics in Managing Public Health and Infectious Diseases' 40(5) *Science Robotics* (25 March 2020), accessed at <https://doi.org/10.1126/scirobotics.abb5589>.

<sup>301</sup> 'Covid-19 and African Tech Startups Roundup' *VentureBurn* (26 May 2020), accessed at <https://ventureburn.com/2020/05/covid-19-and-african-tech-startups-roundup-26-05-2020/>.

the last of the forthcoming decade. Understood as a harbinger of things to come, we may welcome the robots who looked over us as angels.<sup>302</sup>

'Tis nice to dream. Some machines and novel technologies may augment our work world. But for a large portion of the world's eight billion human inhabitants, machines and the AI programs that run them will make many of us redundant. AI will make sure that we are where we *need* to be.<sup>303</sup> Machines may even clothe and feed us – but only like a distant mother, loveless, incapable of connection, to whom we must always say we are 'sorry', even if we do not know what we have done wrong.

The future was once merely unevenly distributed. It appeared, just a few years ago, that it would take another decade for disruptive technologies to eliminate between 33% to 50% to 67% of jobs in South Africa. COVID-19 has merely acted as an accelerant in an age where each one of us is a potential employer with an incentive to automate where possible. The future, it turns out, is already here. As a result, many of us could find ourselves living on the periphery sooner rather than later.

The calculus for South African permanent technological unemployment is made slightly more complex by the two economies – formal and informal – and two classes – upper-middle class and poor – that exist side by side. Egged on by a government that cannot get its facts or levels straight, many people have returned to 'normal'. People eat out and frequent malls because – despite the clear and present danger – they like to do so and the government encourages them to behave as if the COVID-19 pandemic has come and gone. Thus, some employees will return to their jobs in poorly ventilated malls where few wear masks. However, still others will find themselves out of work because many stores are just making their monthly payments and cannot pay their wages. The marriage of workers in the formal sector and domestic workers in the informal sector will turn on both retrenchments in a battered, perhaps permanently damaged formal sector and the intimacy of the relationship between those who must concern themselves with assessments of their future income and wealth in the formal sector and informal workers who have lived in their homes, done the washing and even put their kids to bed. As far as I'm concerned, most of the stores in malls and restaurants on the street can disappear – my relationships are at arm's length. As for people who have taken care of me and loved ones, well that's another matter. No machines can replace them – as an emotional matter. But are they necessary? No. The notion of someone doing my dishes or washing was anathema to me when I arrived in South Africa – and now it's simply part of a riven social contract. I can cook and clean – I can push a button on a machine. The possibility of permanent technological unemployment exists within my very own household. It's hardly an abstraction.

<sup>302</sup> M Corkery & D Gelles 'Robots Welcome to Take Over, as Pandemic Accelerates Automation: Broad Unease about Losing Jobs to Machines Could Dissipate as People Focus on the Benefits of Minimizing Close Human Contact' *The New York Times* (10 April 2020), accessed at <https://www.nytimes.com/2020/04/10/business/coronavirus-workplace-automation.html?utm>. Corkery & Gelles write:

The recycling industry was already struggling before the pandemic. Now, an increasing number of cities are suspending recycling services, partly out of fear that workers might contract the coronavirus from one another ... One solution: Let robots do the job.

That all sounds quite nice. That is, unless you and your reasonably well-paid union job have been made redundant.

<sup>303</sup> R Anderson 'The Panopticon is Already Here: Xi Jinping is Using Artificial Intelligence to Enhance His Government's Totalitarian Control – and He's Exporting This Technology' *The Atlantic* (September 2020), accessed at [www.theatlantic.com/magazine/archive/2020/09/china-ai-surveillance/614197/](http://www.theatlantic.com/magazine/archive/2020/09/china-ai-surveillance/614197/).

## I. Don't Discount the 'Wicked' Harms and Risks that Already Exist

As this book goes to press, humanity struggles with the incipient stages of a worldwide pandemic. Having already taken two million lives by the end of December 2020, COVID-19 could take millions more – even as we wait for billions of doses of truly efficacious vaccines to be rolled out. However, unless entire economies collapse, it's unlikely that Bill Gates' projection of 10 million deaths on the African continent alone will come to pass.<sup>304</sup> Even if vaccines and logistical solutions to their delivery shorten the duration of the pandemic, the long-term effects – as already identified – are likely to be quite pronounced. Moreover, this pandemic is, as the book's title suggests, unlikely to be the last wicked problem barreling down the tracks. Indeed, the others will make this wicked problem seem like just another sequel to 'Home Alone'. Problems mentioned only glancingly should keep us awake at night, or on the move.<sup>305</sup> However, we are quick to forget, and perhaps that's a necessary survival mechanism. It's just ill-suited for this moment in human history.

Again: Schadenfreude is not a good look for the beginning of a book. But then a book apparently about one or two specific wicked problems, set against the background of other wicked problems, contains its fair share of dyspepsia and, ultimately, frustration with the rosy-eyed assessments of our collective future or the fighting of past wars for a feel-good experience.

One clear lesson is how wicked problems reinforce and accelerate one another. This pandemic has already had a dramatic effect on accelerating permanent technological unemployment,<sup>306</sup> climate change and natural resource scarcity, nuclear proliferation, the

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<sup>304</sup> S Kempton 'Bill Gates Warns of 10 Million Deaths as Coronavirus Spreads to Africa' *The Telegraph* (15 February 2020), accessed at <https://www.telegraph.co.uk/news/2020/02/15/coronavirus-bill-gates-warns-10-million-deaths-virus-spreads/>. Gates offered his assessment just hours before the first Covid-19 infection was confirmed in Cairo and reiterated his alarm: '[W]e've always known the potential for a ... pandemic ... [to] disrupt health systems and economies and cause more than 10 million excess deaths.' Although the continent – save for South Africa, Egypt and Algeria – has been spared the worst of the first wave, the absence of testing and accurate official record keeping has certainly kept the figures down. The real explanation: most people on the African continent do not live long enough to experience the mass die off of the elderly.

<sup>305</sup> South Africa's own experience with Extreme Drug Resistant Tuberculosis and its interaction with HIV should sound a loud, cautionary note in this regard. E Marris 'Extreme TB Strain Threatens HIV Victims Worldwide' (2006)(443) *Nature* 131:

An outbreak of virulent and very drug-resistant tuberculosis in South Africans with HIV is horrifying health professionals and prompting the usually slow-and-steady field of tuberculosis medicine into emergency action. 'This is the nightmare scenario of HIV-fuelled drug resistance,' says Paul Nunn of the World Health Organization's (WHO's) Stop TB Partnership. The new strain, called extreme drug-resistant tuberculosis (XDR TB), is virtually untreatable. Neither the standard drugs nor at least three of the six classes of more toxic and less-effective backup drugs are effective.

<sup>306</sup> As *The Economist* noted in the introduction to its cover story – Z Minton Beddoes 'How Covid-19 Will Reshape the Global Economy' *The Economist* (8 April 2020) – within the first three months of the pandemic various detrimental economic trends that this book engages have already accelerated:

With countries in lockdown accounting for over 50% of global GDP, the collapse in commercial activity is far more severe than in previous recessions. Numerous indicators suggest extreme stress. Global oil demand has dropped by up to a third; the volume of new cars and parts shipped on America's railways has dropped by 70%. *Many firms have only enough inventories and cash to survive for three to six months.* The exit path for those that survive will be precarious, with uneasy consumers, an efficiency-sapping

failure of numerous international multilateral institutions designed to foster cooperation, the hardening of borders (and the hearts within), the increase in autocratic rule across the political board, and the free-fall of economies whose pain has been, and will continue to be, most keenly felt by those who are poor and thus most vulnerable to all of the aforementioned depredations.

*I wish that Dr James had been right*

I don't believe that there's a silver lining to be found in any of the events described in this Prologue or in the rest of this book.<sup>307</sup> However, another important lesson exists that is germane to the contents of this work. Scientists are sharing information in an unprecedented fashion – perhaps because this pandemic has touched every nation on the planet and their own communities. Whatever the motivation, Dr Francesco Perrone sounded a note of appreciation for the collective efforts (and the informed scepticism) of the scientific community in March 2020:

'I never hear scientists – true scientists, good quality scientists – speak in terms of nationality,' said Dr. Francesco Perrone, 'My nation, your nation. My language, your language. My geographic location, your geographic location. This is ... really distant from true top-level scientists.'<sup>308</sup>

It took a crisis of this magnitude for scientists themselves to stop competing with one another initially – as opposed to the unseemly race to identify the HIV genome. 'Strike that, reverse it', as Willy Wonka said. As the AstraZeneca/Oxford University vaccine fiasco demonstrates, even scientists will distort data in the race to be first, or even third. In addition, the dependency of scientists upon the states, universities, communities, and other entities that support their work is hardly at an end. That the wealthiest, most powerful nations have poured tens of billions of dollars into research, treatment modalities and vaccines over which they will exercise a strong proprietary interest has already dramatically curtailed access to critical information regarding the nature of COVID-19 and SARS-CoV-2.<sup>309</sup>

This last observation reflects the primary thesis of this work: securing the political, social and economic cooperation of various states, sub-publics, associations, international bodies, firms, NGOs and eight billion people with a wide range of conflicting interests is no easy matter. For example, the competing concerns of public health and economic wellbeing have too often been manipulated for venal political and pecuniary ends when governments (and other social actors) articulate rules for both social distancing and the reopening of

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stop-start rhythm, and tricky new health protocols. In the long run companies will have to master a new environment. The crisis and the response to it are accelerating three trends: *an energising adoption of new technologies*, an inevitable retreat from freewheeling global supply chains and *a worrying rise in well-connected oligopolies*. (Emphasis added)

<sup>307</sup> If it takes such obvious *made for TV* death and destruction to elicit acts of generosity, what happens when the problems that we face once again become 'invisible'?

<sup>308</sup> M Apuzzo & D Kirkpatrick 'Covid-19 Changed How the World Does Science, Together' *The New York Times* (1 April 2020), accessed at <https://www.nytimes.com/2020/04/01/world/europe/coronavirus-science-research-cooperation.html>.

<sup>309</sup> J Hancock 'They Pledged to Donate Rights to Their COVID Vaccine, Then Sold Them to Pharma' *KHN News* (25 August 2020), accessed at <https://khn.org/news/rather-than-give-away-its-covid-vaccine-oxford-makes-a-deal-with-drugmaker/>.

economies.<sup>310</sup> The consequence of such distortions has led to a refusal by citizens in many nations to heed the most basic hygiene requirements<sup>311</sup> and even minor behavioural changes designed to limit the transmission of SARS-CoV-2. Conflicts between nations over testing materials and the unequal distribution of vaccines has virtually displaced the rapid spread of SARS-CoV-2 variants as a source of news.<sup>312</sup> Recall that because of such a lack of global cooperation, public investment and unequal healthcare resources, Adar Poonawalla, the CEO of Serum Institute issued the following warning:

It's going to take four to five years [the end of 2024] until everyone gets the vaccine on this planet ... [he] estimated that if the Covid-19 shot is a two-dose vaccine – such as measles or rotavirus – the world will need 15bn doses.<sup>313</sup>

Given the difficulty in securing cooperation with respect to the current crisis, it comes as little surprise that we have made only slight headway with respect to the decalogue of wicked problems that face us. COVID-19 has become both a symptom and a cause of our inability to address predicaments that threaten our existence.<sup>314</sup> However, as I shall argue in Chapters II and V, the same domestic, regional and global institutions that have thus far failed us, might, if radically altered, become institutions within which our salvation lies. Only might. At the moment, such inclusive political and economic institutions in South Africa, in the region, or around the globe, are nowhere in sight. *That much, I know.*

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<sup>310</sup> L Winter 'Data Fog: Why Some Countries' Coronavirus Numbers Do Not Add Up: Reported Numbers of Confirmed Cases Have Become Fodder for the Political Gristmill' *Al Jazeera News* (17 June 2020), accessed at <https://www.aljazeera.com/indepth/features/data-fog-countries-coronavirus-numbers-add-200607065953544.html>.

<sup>311</sup> J Peters 'Will Herman Cain's Death Change Republican Views on the Virus and Masks?: His Publicly Dismissive Attitude about the Pandemic Reflected the Hands-Off Inconsistency of Many Party Leaders' *The New York Times* (29 July 2020), accessed at <https://www.nytimes.com/2020/07/30/us/politics/herman-cain-gop-coronavirus.html?action>.

<sup>312</sup> T Bollyky & C Bown 'The Tragedy of Vaccine Nationalism: Only Cooperation Can End the Pandemic' *Foreign Affairs* (July 27, 2020), accessed at [https://www.foreignaffairs.com/articles/united-states/2020-07-27/vaccine-nationalism-pandemic?utm\\_](https://www.foreignaffairs.com/articles/united-states/2020-07-27/vaccine-nationalism-pandemic?utm_).

<sup>313</sup> S Findley & A Gross 'Not Enough Covid Vaccine for All Until 2024, Says Biggest Producer: Serum Institute Warns That Companies Are Not Increasing Production Capacity Quickly Enough' *Financial Times* (14 September 2020), accessed at <https://www.ft.com/content/a832d5d7-4a7f-42cc-850d-8757f19c3b6b?>.

<sup>314</sup> Scientists often cooperate when not motivated by the desire to 'get there first'. They can just as easily be hamstrung by venal politicians. Dr Li Wenliang, who died from COVID-19, was an early whistle-blower. But reporters asked after his death: "Is that it?": Chinese Report into Death of Doctor Who Raised Coronavirus Alarm Criticized' *Reuters* (18 March 2020). Dr Rick Bright was removed from his position as Director of the Biomedical Advanced Research and Development Authority after resisting efforts to increase access to hydroxychloroquine – a drug trumpeted by Trump but found to be dangerous for off-label treatment of COVID-19. 'Reviving the US CDC' (2020) 395 *The Lancet* 1521; D Mangan 'Coronavirus Whistle-blower Rick Bright's Complaint Shows High Likelihood of "Wrongdoing," Watchdog Says' *CNBC News* (14 May 2020), accessed at <https://www.cnbc.com/2020/05/14/coronavirus-rick-bright-testifies-as-trump-criticizes-him.html>.

# CHAPTER I

## An Exhalation

Four things do not come back: the spoken word, the sped arrow, the past life, and the neglected opportunity.

Arabian Proverb

### A. Why Experiments Fail and Why It Takes Time for Some to Succeed

Roughly five years ago, I explained why South Africa's experiment in inclusive democracy had stalled and failed to deliver the manifold promises adumbrated in the Constitution.<sup>1</sup> It was a classic instance of a failure of 'collective action' by our democratically elected representatives – as determined by the rest of society – to deliver basic public goods. As my friend Theunis Roux observed at the time – in a footnote found in an article of mine<sup>2</sup> – the window for our experiment in inclusive democracy looked to be shut for another 10 to 15 years.<sup>3</sup>

Until late 2019, we were taking on water and barely staying afloat. To make matters worse, we started the year 2020 with permanent load shedding, the second recession in two years, an ongoing drought and the subsequent downgrade to junk status by the last, pay to play, rating agency. March 2020 then ushered in:

- a global pandemic that took South Africa's unemployment rate from 30% to over 50%;
- an economy that's tanked (and may be permanently damaged) because of a poorly managed lockdown; and

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<sup>1</sup> S Woolman 'South Africa's Aspirational Constitution and Our Problems of Collective Action' (2016) 32 *South African Journal on Human Rights* 1; S Woolman 'Understanding South Africa's Aspirational Constitution as Scaffolding' (2015/2016) 60 *New York Law School Law Review* 401. These views also form a partial basis for a book in progress with my colleague, Firoz Cachalia: F Cachalia & S Woolman *A Thin Theory of Democratic Politics Suited to South Africa* (South Africa Institute for Constitutional Public, Human Rights and International Law Conference, Colombian/South African Exchange, 4 December 2018, draft on file with authors).

<sup>2</sup> S Woolman 'South Africa's Aspirational Constitution and Our Problems of Collective Action' (2016) 32 *South African Journal on Human Rights* 1.

<sup>3</sup> T Roux *The Politico-Legal Dynamics of Judicial Review: A Comparative Analysis* (2018). In this sweeping and comprehensive work, Roux offers a four-part typology of judicial review regimes and assesses the way social processes influence transitions (back and forth) between these distinct conceptions of judicial review in thirteen jurisdictions. *This* monograph harbours very, very different ambitions and considers the state of judicial review in South Africa to be *largely* epiphenomenal with respect to the problem of permanent technological unemployment and wicked problems generally. That said, had the judiciary failed to display a strong commitment to the rule of law, South Africa would have had no chance whatsoever at mitigating the negative consequences of the wicked problems canvassed in this book. S Woolman 'The Politics of Accountability: How the South Africa's Judicial Recognition of the Binding Legal Effect of the Public Protector's Recommendations Had a Catalyzing Effect that Brought Down a President' (2018) 8 *Constitutional Court Review* 155.

- an appalling lack of political leadership that will likely lead to unexpectedly high COVID-19 infection rates over time (as a result of the government's abject failure to follow its own expert public healthcare officials' playbook and a new variant of SARS-CoV-2 that will evade the current batch of vaccines' capacity to blunt infection and transmission).<sup>4</sup>

The absence of a coherent response from the country's extremely thin civil society simply reinforces our inability to take advantage of the formally inclusive political institutions enshrined in the nation's Constitution<sup>5</sup> and the powerful rule of law jurisprudence articulated by our Constitutional Court.<sup>6</sup> As of the end of December 2020, South Africa's experiment in inclusive democracy, by any metric one uses to determine whether a state satisfies the desiderata of an inclusive democracy, must be deemed a failure. Whether we can claw our way back, from a position where we are just barely holding on remains to be seen. It's not a given. And it's too early to say that it's impossible. You also know my answer by now: 'I don't know.' (But I sure wouldn't bet on it.)

The earlier, aforementioned articles were meant to be part of a much larger work of which this smaller book was to be just a part. No matter. Not everyone can produce, in the face strong headwinds, large, sweeping tomes that explain (soup to nuts) why we are where we are.<sup>7</sup>

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<sup>4</sup> S Madhi, G Gray, N Ismail, A Izu, M Mendelson, N Cassim, W Stevens & F Venter 'On Covid-19 – An Editorial' *South African Medical Journal* (published online 19 June 2020), accessed at <https://doi.org/10.7196/SAMJ.2020.v110i8.15055>:

The rationale for embarking on a total and highly restrictive lockdown in SA, with partial relaxation recently, included slowing the effective reproductive rate and aspiring to virus containment. However, an efficient testing strategy for COVID-19, inclusive of ability to trace at least 70% of contacts, which is vital to achieve containment, was not in place. Shortcomings of the testing strategy for COVID-19 case identification in SA at the time of the start of the level 5 lockdown included restrictive criteria on who to test, and inadequate capacity to test at scale by the National Health Laboratory Service (NHLS) and in the private sector. Shortcomings of the testing strategy for COVID-19 case identification in SA at the time of the start of the level 5 lockdown included restrictive criteria on who to test, and inadequate capacity to test at scale by the National Health Laboratory Service (NHLS) and in the private sector ... If the pandemic is not mitigated, the WHO estimates that deaths from COVID-19 in sub-Saharan (population 1 078 billion) during 2020 could range from 83 000 to 190 000, while modelling from SA (population 59.2 million) suggests that there may be 48 000 deaths within the next 4 months in South Africa alone ... In SA, testing for TB decreased by 50% ... This significant reduction in TB diagnosis is likely to result in delay of initiation of TB treatment and threatens to reverse gains made in reducing the incidence of TB in SA, and lends itself to exacerbating Mycobacterium tuberculosis transmission to others ... During the level 5 lockdown, there has been a 22% reduction in average weekly HIV-1 viral load testing ... and a 33% reduction in CD4+ cell count testing ... compared with the pre-lockdown periods. These decreases suggest possible treatment interruptions and missed appointments due to patient fear of SARSCoV-2 infection and violating travel restrictions in the context of widespread security force excesses. Non-COVID-19 morbidity and mortality could far exceed the ... deaths the WHO estimates would occur from COVID-19 ... We believe that a strategy focused primarily on COVID-19 can no longer be ethically or morally justified, and will have long-lasting health, societal and economic impacts that may reverberate for decades to come.

<sup>5</sup> S Woolman *The Selfless Constitution: Experimentalism and Flourishing as Foundations of South Africa's Basic Law* (2013); D Acemoglu & J Robinson *The Narrow Corridor: States, Societies, and the Fate of Liberty* (2019).

<sup>6</sup> T Roux *The Politics of Principle: The First South African Constitutional Court, 1995–2005* (2013).

<sup>7</sup> F Fukuyama *Political Order and Political Decay* (2014). As this book makes clear, many of the arguments in that earlier work engaged positions in the legal academy that are now clearly stillborn.

This more modest work, however, attempts to explain where we are, as well as where we very likely will be, in South Africa, with respect to a number of wicked problems (problems of collective action on steroids),<sup>8</sup> beginning with permanent technological unemployment, a global pandemic, climate change, nuclear proliferation and the failure of multinational institutions. But as the Prologue and Chapter II make clear, these wicked problems do not operate in isolation. They reinforce and accelerate one another.<sup>9</sup> The predictions now are far more dire than they were in the penultimate draft of this work. The COVID-19 economy has seen a jump, not only in the ‘official’ narrow overall unemployment rate, but in the unemployment rate amongst poorly educated and low-skilled youth – from 60% to close on 80% – our precariat. Both cohorts of unemployed workers will face enormous challenge in the face of global economic disruptions and the technological solutions to those disruptions. Automation not only eliminates low-skill jobs in their entirety. It also places significant pressure on all workers whose labour component of production shrinks when cheaper and more efficient technology can be employed. Its tsunami-like consequences crash over those persons and communities already mired in abject poverty and ripples through and upends the lives of people and neighbourhoods that would otherwise be considered middle- to upper-middle class.

We know that not all novel technology is benign – take our cell phones and tablets and the misuse of our once-private data by governments, big-tech corporations, and thieves and hackers with readily available surveillance software. You already know that Zoom watches you and that Siri is listening. Worse still, China’s burgeoning surveillance technology industry – and large-scale imports of this evil AI by other autocratic nations – has made Big Brother a reality. Just ask the 11 million Muslims in China’s Xinjiang Province who make your PPE under concentration camp conditions. (China no longer needs barbed wire – they know exactly where everyone is in that northwestern idyll.) Perhaps the greatest danger of all is the ability of state and non-state actors to bring entire core systems down within enemy states – or just for fun.<sup>10</sup>

As a general matter, automation drives development and increases productivity. At the same time, new technology often displaces labour. The critical question then is how technology and capital reinstate and enhance labour by creating new forms of employment and increasing our overall skillset. The displacement is often painful. And as workers often know, it can prove deadly. Reinstatement, when it occurs, is a rough affair. Indeed, one premise of this book is that technology and capital over the past 30 years, and the last 10 in particular, have reshaped the workforce in a manner that has led to displacement without meaningful reinstatement. As the Prologue makes clear, COVID-19 has accelerated that permanent displacement. In some countries, up to 42% of the newly unemployed can

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<sup>8</sup> This book very briefly explains ‘climate change and natural resource scarcity’ as a wicked problem because (a) it’s easier to explicate the phenomenon of wicked problems in light of a problem with which we are already quite familiar; and (b) it’s an absolute, ongoing disaster of our own making that’s already being keenly felt throughout large swathes of South Africa.

<sup>9</sup> Chapter II explains how nuclear proliferation, climate change and natural resource scarcity, and global pandemics satisfy the definitional requirements of wicked problems and the extent to which they reinforce and accelerate one another.

<sup>10</sup> M Schaaake ‘The Lawless Realm: Countering the Real Cyberthreat’ *Foreign Affairs* (November/December 2020), accessed at <https://www.foreignaffairs.com/articles/world/2020-10-13/lawless-realm>.

expect their jobs to have vanished when their economies eventually recover, with no reinstatement effect to be had from the adoption of novel technologies.

Authors such as Yancy Strickler suggest that it often takes a generation to accept ‘new ways’ of doing things or organising the world.<sup>11</sup> Here’s his preferred example. He explains the slow uptake of antiseptics in late 19th century medicine. Prior to Lister’s discovery of antiseptics, 80% of surgery patients died from post-surgery infections. As Strickler notes, old-school doctors proved reluctant to employ this novel approach. Younger physicians proved less so. Thus, it took the dying off of a generation of doctors to make antiseptics more palatable and widely accepted.

The same holds true for the use of analytics – number-crunching – in sports. Old-timers in baseball relied on time honoured nostrums and ‘the eye test’.<sup>12</sup> But a younger crowd demonstrated how the value of virtually every play and every player could be captured by numeric formulas. Not surprisingly, the old-schoolers and their traditional approach over-valued many contributions and radically undervalued others. Analytics suddenly allowed small market teams – with smaller payrolls – to compete with larger market teams – who could afford lavish salaries on stars. (It turns out that two (maybe three) modestly paid players might help a team win – according to the statistics – the same number of games as a renowned player at the top end of the pay-scale.) The same held true for the three-point shot in basketball. For years, it was derided as inefficient and selfish. Some 30 years down the road, the players themselves, and those who track shot selection and scoring, have demonstrated how much more valuable a three-point shot can be – in the hands of lots of players – than the standard two-point shot.<sup>13</sup> The game has changed. It won’t change back unless they change the rules: and that won’t happen so long as fans – as well as the players – enjoy the shot selection and the increased excitement that comes with higher scoring. In my own case, it has taken a full generation for physicians to recognise an autoimmune disorder that felled me in my early adult life. As with displacement and reinstatement for labour, the 25-year road back to normal has been fairly disruptive and painful.

Do we have 25 years?

While antiseptics and analytics have happy endings, it’s unclear that the array of wicked problems that humanity as a whole must face can wait a generation for a benighted cohort of politicians or employers or citizens to die off (and take their revanchist ideas about the world with them.) We don’t have a generation to eliminate the dangerous proliferation of nuclear weapons, to reverse climate change and natural resource scarcity, to undo the damage done to the rule of law and political institutions in both nascent and established

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<sup>11</sup> Y Strickler *This Could Be Our Future: A Manifesto for a More Generous World* (2019).

<sup>12</sup> The ‘eye test’ relies on ‘feel’ and ‘experience’ over what the numbers actually say. Imagine, for example, a doctor addressing you as follows: ‘You look absolutely fine – did you remember to use your leeches for some blood letting today?’ You would expect the doctor to perform a proper exam employing modern instruments and technology, and then sending any necessary blood tests, or a COVID-19 PCR test, off to a reputable laboratory.

<sup>13</sup> According to the rules of the National Basketball Association:

A player’s feet must be completely behind the three-point line [23 ft 9 in or 7.24 m from the basket], at the time of the shot or jump in order to make a three-point attempt; if the player’s feet are on or in front of the line, it is a two-point attempt. A player is allowed to jump from outside the line and land inside the line to make a three-point attempt, as long as the ball is released in mid-air.

democracies, to rebuff authoritarianism and nationalism in most nations, to somehow address the fragmentation of the nation-state across the globe, to reinvigorate multilateral and international political and economic institutions and agreements, and to reset the rules of the game so that immense amounts of the world's wealth is no longer concentrated in the hands of an increasingly small number of national-socialist state leaders and parties, as well as corporations and individuals that readily cross sovereign borders and resist domestic challenges to limit their power. And, if I am right, then South Africa, like much of the rest of the world, also does not have a generation to address the wicked problem of permanent technological unemployment.

## **B. Permanent Technological Unemployment is Not an Abstraction: It's a Living, Dragon-Breathing, Wicked Problem**

For the past 16 years I have lived on the wrong side of the railroad tracks in Homestead Road, Bramley North, Johannesburg, South Africa. My modest townhouse has two small bedrooms, a tiny three-cornered kitchen that opens up into a living room, plus a dining nook that I rarely use. If you walk through the backdoor, you'll enter a sliver of jungle (that I plant and tend but do not own) replete with a four storey rubber tree, several soaring palms trees that must regularly be pruned so as not to obscure the view of my neighbours, a glade of bamboo and a host of other indigenous flora that surround and cover the yard in a wild canopy that blocks out the sun. In the middle lies an incongruent four-foot by twelve-foot rectangular artificial putting green. This idiosyncratic touch provides a welcome respite from the silence of my study and the loneliness of the long-distance writer.

I'm privileged, relatively speaking.

Thick bars cover most of the windows. A security gate (for which I don't have the key and thus have never locked) stands ready to secure my inner sanctum from the outer sanctum. Perhaps that's not much more than urban life anywhere might require. However, my unit's walls and bars are not alone in permitting ingress and egress to my humble abode. Twelve to twenty-foot walls encircle my quiet complex. They are adorned with ivy and crowned with thorny barbed wire and high-voltage electric fencing. My pre-Hobbesian freedom is secured by a front gate with one of three 24/7/365 guards. Beyond these vigilant guards, four-by-four trucks roam the neighbourhood, each with two private security sentries who wear flak from head to toe and carry semi-automatic rifles designed to thwart would-be thieves and more menacing criminals. As long as I carry a remote to open the gate, I am *free* to leave my little prison in a 16-year-old jalopy whenever I wish.

It's worth remembering, as I leave my humble abode, a constant refrain from my analyst years ago when I experienced the kind of the existential dread that flows inexorably from the most debilitating physical disability: 'You have a job. You have friends. You have a roof over your head.' This nostrum provided no immediate relief. But almost two decades down the road, I can appreciate the sagacity of this simple but powerful observation. While it didn't come fast or easy, I've had the pecuniary resources, social capital and access to healthcare that allows me to function when I invoke my right to reasonable accommodation.

Just around the corner from my flat, in the very same postal code (2090), is Alexandra Township ('Alex'). This 2.67 square mile (6.91 km<sup>2</sup>) residential area is now bursting at

the seams.<sup>14</sup> Alex provides an almost perfect microcosm of where South Africa has been, where it is now and where it may be going.

Occasionally called ‘Gomorrah’ by its denizens,<sup>15</sup> Alex ranks amongst the poorest and most poorly served urban communities in South Africa.<sup>16</sup> Located on the banks of the Juskei River, residents of Alex have a clear view, across the adjacent M1 highway, of the green glass Oz of Sandton’s skyscrapers, Johannesburg’s wealthiest suburb and the country’s financial and business centre.

Jarring are the proximity and the disjunction of these two ‘suburbs’.

Racist, colonial structures determined Alex’s possibilities from its inception in 1912. While its establishment a year prior to the infamous and inhumane Land Act of 1913<sup>17</sup> meant that it constituted one of the few domains in which black landowners could retain title, it kept the racist moniker of ‘native township’. As a ‘native township’, its council could not collect taxes. On top of that, the white Johannesburg City Council refused to take responsibility for Alex’s upkeep or management. Conditions worsened after the National Party took the reins in 1948 and imposed its apartheid policies across the country. Yet Alex remained a hotbed of resistance. It rebuffed (almost entirely) the apartheid state’s efforts to bulldoze its houses and other family accommodation in innumerable attempts to replace them with male hostels designed to provide lodging for cheap, forced labour and servitude.<sup>18</sup>

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<sup>14</sup> It’s original geographical constraints and current density mean that Alex’s significant number of well-established houses and 25 000 informal shacks have crossed over into the industrial buffers of Wynberg and Marlboro and suburbs such as Kelvin, Kew and Lombardy. A community that had 30 000 residents in 1916, a century later has more than 400 000. But Alex has never conformed to external strictures. It’s worth noting, however, that while Alex may have expanded beyond its initial boundaries – the effects of the density is most keenly felt by those who remain within its strictures. Rent is higher than many workers in the informal economy can afford, and long-standing owners of houses find themselves at odds with local landlords who have transformed RDP housing units into miniature ‘apartment’ complexes and who do not pay their ‘fair’ share of rates and taxes.

<sup>15</sup> L Nkosi ‘South Africa: Running with White People – A Fun Run through Wealthy Suburbs and “Native” Townships Exposes Bitter Racial Divisions and Prejudices’ *The Guardian* (October 23, 2012), accessed at <https://www.theguardian.com/world/2012/oct/23/south-africa-race-run>.

<sup>16</sup> S Wilson ‘Making Space for Social Change: Pro-Poor Property Rights Litigation in Post-Apartheid South Africa’ in J Brickhill (ed) *Public Interest Litigation in South Africa* (2018).

<sup>17</sup> The Land Act of 1913 dispossessed virtually all black South Africans as landowners. T Ngcukaitobi *The Land is Ours: Black Lawyers and the Birth of Constitutionalism in South Africa* (2018).

<sup>18</sup> S Woolman & M Bishop ‘Slavery, Servitude and Force Labour’ in S Woolman & M Bishop *Constitutional Law of South Africa* (2nd Edition, 2008) Chapter 58; S Woolman & M Bishop ‘Down on the Farm and Barefoot in the Kitchen: Farm Labour and Domestic Labour as Forms of Servitude’ (2007) *24 Development SA* 595. The article evaluates the claim that working conditions for farm workers and domestic workers in South Africa can be analysed in terms of the constitutional prohibition against servitude. Recent research and statistics suggest that for most of these workers the conditions fit the accepted definition of servitude. Although a finding that the constitutional right to be free from servitude has been violated is not a straightforward matter, the existing research provides the empirical and legal predicates for such a finding. The use of law as a tool for social transformation has inherent limits. At a minimum, however, a legal finding of such a constitutional infraction obliges the state to employ all available means at its disposal to restore the dignity of these workers.

Not long after the 1976 Soweto Uprising, the collective action of Alexandra's residents resulted in a halt to forced removals and evictions.<sup>19</sup> In addition, apartheid's commitment to the complete denationalisation, dispossession, degradation and dehumanisation of black South Africans met its match in Alex. Suddenly, residents had their transient status replaced with the recognition of the permanence of their occupation.

One might have thought this community's strength during colonial rule and apartheid would translate into rather radical transformation in a post-1994 South Africa. But Alex has fared no better than other historically disadvantaged black communities.<sup>20</sup> Its first effort to combine Alex and Sandton into a single municipal entity failed.<sup>21</sup> Recent efforts to realise a more egalitarian metropole in which citizens on both sides of the highway received the same public goods and services have also stalled.<sup>22</sup> It's not for want of trying. However, given the township's significant internal strife and the municipality's maligned neglect, it's clearly a problem of collective action.

My interest in Alex is more than a mere abstraction. The residents of Alex are my neighbours – and I engage them one way or another, every day.

Whilst lecturing at Wits Business School several years ago, it occurred to me that I could give my diverse and representative body of students (mid-level managers and middle-aged entrepreneurs) a concrete understanding of corporate social responsibility and sustainable development by having them work with small- and micro-business owners. Together, the students and the Alex business owners created business plans necessary to solve specific problems and to expand these companies in a manner that would lead both to sustainability and new job opportunities.<sup>23</sup> The literature and the MBA studies conducted by my own students demonstrated that gaps in knowledge (as well as power) – for example, managing a supply chain or keeping a credit/debit ledger or accumulating capital required to expand – constituted a barrier to individual and community wellbeing.<sup>24</sup>

<sup>19</sup> K Jochelson 'Reform, Repression and Resistance in South Africa: A Case Study of Alexandra Township, 1979–1989' (1990) 16 *Journal of Southern African Studies* 1; M Sarakinsky *From Freehold Township to Model Township — A Political History of Alexandra: 1905-1983* (1984); M Murray *South Africa: Time of Agony, Time of Destiny The Upsurge of Popular Protest* (1987).

<sup>20</sup> M Goldman 'Notes from the World Summit in Johannesburg: History in the Making?' (2002) 13 *Capitalism Nature Socialism* 68.

<sup>21</sup> C Bénéit-Gbaffou & P Gervais-Lambony 'Forms of Local Democracy in South African Cities' (2008) 196 *Revue Tiers Monde* 733.

<sup>22</sup> V Bafetane 'Alexandra Residents Refuse to Back Down' *MSN* (7 June 2019), accessed at <https://www.msn.com/en-za/news/> (Alex Shutdown Movement threatens to close down Sandton and disrupt both business and residential life); 'Sandton Braces for Alexandra Protest Invasion' *The Citizen* (8 April 2019), accessed at <https://citizen.co.za/news/south-africa/protests/sandton-braces/>

Africa's 'Richest Square Mile' should brace itself today, as residents of its neighbouring township are expected to bring the Sandton CBD to a standstill. Last week's protests, which saw residents of Alexandra barricade several roads with burning tyres ... [occurred] after Johannesburg mayor Herman Mashaba failed to respond to residents' demands to meet with them. Residents had a meeting yesterday during which the plans for today's shutdown of Sandton were discussed.

<sup>23</sup> The person who really made all of this happen is Ngwako Raboshakga, of North West University. Ngwako once ran Edward Nathan Sonnenberg Africa's Legal and Business Centre in Alex. He continues his grassroots work in Alex and other marginalised communities. All the credit for this initiative belongs to him.

<sup>24</sup> R Hamman, S Woolman & C Sprague (eds) *The Business of Sustainable Development: Human Rights, Public-Private Partnerships & New Business Models* (2009).

But such well-intentioned efforts didn't really prime the pump or create substantial growth at the bottom of the pyramid.<sup>25</sup> Themba Mafuya, of the Youth Advisory Centre (YAC), notes that he collects 'dozens of résumés from the eager youth who are desperately in search of employment ... [and] that "People are hungry for jobs," [as] he looks at the unending stream of visitors walking in and out of the center.'<sup>26</sup> Perhaps some of the young persons whose grammar and résumés he corrects have secured employment. Perhaps. Youth unemployment – between ages 15–34 – sat at staggering 60% prior to the COVID-19 pandemic. The pandemic has already acted as an unemployment accelerant – as most employees in the formal economy remained idle while businesses stayed shuttered for the first hard lockdown of five weeks, and opened slowly, if at all, thereafter. Informal workers must now face decisions by employers as to whether to employ them, given the economic turndown and the risk that COVID-19 brings when the working poor are viewed – through an often racially tinged prism – as vectors of disease transmission.<sup>27</sup> Inevitably, the residents of Alex feel such depredations immediately, and from the looks of matters, indefinitely to permanently. To add insult to injury, the high rents that landlords collect in Alex because of its proximity to the city makes it that much more difficult a launching pad for young jobseekers.

Many jobseekers, and those who are employed in the informal sector, find themselves further away, in townships such as Thembisa or Diepsloot. Diepsloot, only recently established in 1994, already has a population of 160 000 and, not surprisingly, the highest concentration of unemployed people in Gauteng. The spatial replication of apartheid housing and geography in Diepsloot is rather stunning.<sup>28</sup> Diepsloot's population lives in '24,737 shacks alongside more than 5,000 formal housing [RDP] units ... self-built houses on serviced sites, and a small number of bank-financed houses.'<sup>29</sup> Alex 'enjoys' its proximity to big city employers and its access to some basic services. Diepsloot lacks both. Yet those who work with youth repeat the same stories. Clifford Legodi states that:

Young black people or previously disadvantaged communities are still using the traditional method of taking a taxi, printing a résumé or going to the offices. We felt that it was important to incorporate an online skills program. You look at their online presence. How they apply for a job online. Are they actually keeping a good online profile and how to secure opportunities in time?<sup>30</sup>

<sup>25</sup> CK Prahalad *Fortune at the Bottom of the Pyramid: Eradicating Poverty through Profits* (2006).

<sup>26</sup> G Lion 'The Occupation of Unemployment in South Africa' *Forbes* (20 February 2019), accessed at <https://www.forbesafrica.com/economy/2019/02/20/in-pictures-the-occupation-of-unemployment-in-south-africa/>.

<sup>27</sup> K Couch, R Fairlie & H Xu 'The Impacts of Covid-19 on Minority Unemployment: First Evidence From April 2020 CPS Microdata' *Stanford Institute for Economic Policy Research, Working Paper No. 20-021* (May 2020) accessed at <https://siepr.stanford.edu/sites/default/files/publications/20-021.pdf>; R Oppel Jr., R Gebeloff, K Lai, W Wright & M Smith 'The Fullest Look Yet at the Racial Inequity of Coronavirus' *The New York Times* (5 July 2020), accessed at <https://www.nytimes.com/interactive/2020/07/05/us/coronavirus-latino-african-americans-cdc-data.html?action=click&module=Top%20Stories&pgtype=Homepage>.

<sup>28</sup> R Frank Madlalaté 'Dismantling Apartheid Geography: The Limits of the Law' (2019) 9 *Constitutional Court Review* 195.

<sup>29</sup> G Lion 'The Occupation of Unemployment in South Africa' *Forbes* (20 February 2019), accessed at <https://www.forbesafrica.com/economy/2019/02/20/in-pictures-the-occupation-of-unemployment-in-south-africa/>.

<sup>30</sup> *ibid.*

Is the lack of familiarity with networking on the net in pursuit of employment the real driver of youth unemployment? Manpower Group notes that the main challenge is not a lack of sophistication either with respect to running a business or applying for employment. The simplest explanation is a rapidly increasing number of unskilled labourers in a developing nation:

South Africa and other African economies face a significant challenge to find productive and sustainable employment for the annual new entrants to the labour force. The amount of entrants is a consequence of historical rapid population growth and a swelling of the labour force by school-leavers.<sup>31</sup>

This book suggests that the causes of increasing levels of unemployment – especially permanent technological unemployment amongst youth – are far more complex than Legodi or Laubscher’s explanations allow. We must start with the deep structural conditions of unemployment created under colonialism and pursued with augmented violence under apartheid. For an array of rather obvious reasons, post-apartheid South African businesses have chosen to invest their profits abroad, rather than creating new firms and employment opportunities at home.<sup>32</sup> The state’s efforts – through the Youth Employment Service<sup>33</sup> or the Employee Tax Incentive Act<sup>34</sup> – have not had more than the most *de minimis* effect on youth employment. But that too is only part of the story. Former Finance Minister Mcebisi Jonas has recently written that:

[T]his history ... only partly explains our unemployment problem. The other reasons relate to the sectoral transition of our economy, which anomalously all but bypassed the developmental stage of having a large manufacturing sector. Manufacturing, which should be the engine of job creation for a low-and medium-skilled country such as South Africa, has instead consistently contracted here. To my knowledge, no country has evolved from [low to] middle to high-income status without the presence of a *vibrant manufacturing sector*.<sup>35</sup>

Jonas explains this ‘anomalous’, parlous and downward 25-year trajectory of the South African economy (when other low- to middle-income countries have experienced an uptick in GDP, income and quality of life) and the failure to develop a ‘*vibrant manufacturing sector*’ in terms of the usual suspects:

- a frighteningly poor primary and secondary system of education that does not supply basic skills, and whose deficits can often not be adequately corrected by universities;
- macroeconomic fiscal policies that emphasised foreign direct investment (FDI) rather than reconstruction and development;
- the criminal mismanagement of SOEs; and

<sup>31</sup> E Laubscher ‘Unskilled Labour in South Africa’ *The Medium* (14 July 2018), accessed at <https://medium.com/@erichlaubscher1/unskilled-labour-in-south-africa-af56852ed443>.

<sup>32</sup> In Chapter IV, the book takes a closer look at the fact that South Africa recently ranked ninth in the world in real terms of the export of investment capital. *Ninth!* We are only *third* – behind Liechtenstein and the Netherlands – in terms of Foreign Export Investment (investment abroad) as a percentage of GDP, at 34%. In so far as our pensions are concerned, such investments might not be such a bad thing. As our default macroeconomic policy, we shall see how poorly it has served the nation.

<sup>33</sup> Youth Employment Service: Issued under Section 9 of the Broad-Based Black Economic Empowerment Act of 2003, Vol 6 No. 41866 *Government Gazette* (28 August 2018).

<sup>34</sup> Act 26 of 2013.

<sup>35</sup> M Jonas *After Dawn: Hope after State Capture* (2019) 23. (Emphasis added)

- the inherited and the intentional orientation of the governing party toward using the state apparatus to advance its own interests, as well as the interests of specific individual state actors and private sector actors.

Unfortunately, the best that Jonas can do in terms of mapping a way forward is a warmed-over rehearsal of the National Development Plan in which, *ab initio*, every errant policy pursued over the last 25 years would be corrected – from creating a business friendly environment or a competent bureaucracy, to designing smart, growth-enabling SOEs, to releasing our technological potential, to transforming our labour market so that our weak manufacturing sector might actually reap a youth dividend. Yah. While the remainder of this book will demonstrate the basic truth that you don't get 'mulligans' after so many missed shots, here's a graphic example of why Jonas's policy proposals in *After Dawn: Hope After State Capture* lack traction.<sup>36</sup> Around the world, university educated employees are taking over factory floors once run by low-skilled labourers. As Austen Hufford writes, a recent analysis of US federal job data paints the following picture:

New manufacturing jobs that require more advanced skills are driving up the education level of factory workers who in past generations could get by without higher education ... Within the next three years, American manufacturers are, for the first time, on track to employ more college graduates than workers with a high-school education or less, part of a shift toward automation that has increased factory output, opened the door to more women and reduced prospects for lower-skilled workers. US manufacturers have added more than a million jobs since the recession, with the growth going to men and women with degrees, the Journal analysis found. Over the same time, manufacturers employed fewer people with at most a high-school diploma. Employment in manufacturing jobs that require the most complex problem-solving skills, such as industrial engineers, grew 10% between 2012 and 2018; jobs requiring the least declined 3%, the Journal analysis found. [...] Specialized job requirements have narrowed the path to the middle class that factory work once afforded. The new, more advanced manufacturing jobs pay more but don't help workers who stopped schooling early. More than 40% of manufacturing workers have a college degree, up from 22% in 1991. Looking ahead, investments in automation will continue to expand factory production with relatively fewer employees. Jobs that remain are expected to be increasingly filled by workers from colleges and technical schools, leaving high-school graduates and dropouts with fewer opportunities. Manufacturing workers laid-off in years past also will see fewer suitable openings.<sup>37</sup>

That's only part of a global story that puts paid to Jonas's wishful thinking. The low-skilled, labour-intense manufacturing 'theory of development' ship sailed almost two decades ago. If this book's analysis is correct, then what I describe as the wicked problem of permanent

<sup>36</sup> Or one might measure these policy proposals against the actual steps taken by the author of *After Dawn's* Forward – President Cyril Ramaphosa. After two years in office, it's entirely fair to say that President Ramaphosa has made no discernible progress in terms of the realisation of Jonas' policy proposals. To read *After Dawn*, on a Kindle, in the darkness of level 8 load-shedding lent an air of humour to the exercise.

<sup>37</sup> A Hufford 'American Factories Demand White Collar Education for Blue Collar Work: Within Three Years, US Manufacturing Workers with College Degrees Will Outnumber Those Without' *The Wall Street Journal* (9 December 2019), accessed at <https://www.wsj.com/articles/american-factories-demand-white-collar-education-for-blue-collar-work-11575907185>:

Addison, Illinois, employees in polo shirts and jeans, some with advanced degrees, code commands for robots making complex aerospace components on a hushed factory floor. That is a far cry from work at Pioneer in the 1990s, when employees had to wear company uniforms to shield their clothes from the grease flying off the 1960s-era manual machines used to make parts for heating-and-cooling systems.

technological unemployment will make South Africa unsustainable not only for the vast majority of its youth; it will make society unsustainable for all of us. That's our collective future. Some of this wicked problem's deleterious effects can be mitigated.<sup>38</sup> However contingent on revising institutional arrangements our future may be, as we shall see, this wicked problem's path looks more and more ineluctable.

Let's hope that I'm wrong. It happens all the time.

But before you reflexively reach such a conclusion, consider the lineaments of this book's arguments as thus far adumbrated and fully expatiated in the pages that follow. Consider, as well, the extent to which other wicked problems have recently accelerated in a manner that should elicit surprise, or whether they appeared (as predicted) on cue.

### **C. How Impediments to Successful Domestic Collective Action Limit Our Capacity to Address (Global) Wicked Problems and Wicked Problems Repurposed**

#### *Impediments to Domestic Collective Action as a Limit on Our Capacity to Address Wicked Problems*

In keeping with the spirit of my prior scholarly works, the analysis in Chapter II first turns on three well-established theories regarding successful inclusive collective action and why the failure to create inclusive social, economic and political institutions limits our ability to address wicked problems. All three theories take into account significant built-in constraints on individual and collective rationality and the need for inclusive decision-making mechanisms at multiple political levels: domestic, regional and global. The first theory draws on my prior writing on contemporary neuroscience, analytic philosophy, behavioural economics, development theory and experimental governance to demonstrate that profound (structural) change at the individual, social, political and constitutional level remains extremely hard, especially under our current straightened circumstances. That change occurs primarily as a function of friction between dispositional states, social groups and political associations means that replacing negative defaults with more positive arrangements is not, a priori, impossible. The second theory draws its force directly from Mancur Olson's classic characterisation of problems of collective action. As in my prior work, this book applies that analysis to the politics of post-apartheid South Africa in order to suggest why this nation has not produced the kinds of institutions that would deliver the basket of public goods that every member of this 60-million-person state requires to pursue their own comprehensive vision of the good. The third theory leans heavily on the institutional analytical framework to be found in Acemoglu and Robinson's oeuvre. The evolution of nation-states from being embedded in absolutist, extractive political and economic institutions to growing, however haltingly, into polities with productive, inclusive political and economic institutions has (generally) followed highly contingent, long-term paths. The contingency of such development has meant, firstly, that *the citizens* in the vast majority of countries have never truly enjoyed life in productive, inclusive

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<sup>38</sup> Strategies to limit the harm caused by permanent technological unemployment (without the reinstatement effects that have historically flowed from increases in productivity due to automation) to individuals, to communities and to South African society as a whole is taken up in Chapter V. Both the history and the contemporary theory of permanent technological unemployment are laid out in Chapter III.

democracies and, secondly, that *the citizens* in productive, inclusive democracies can fall prey to the capture of their open institutions by elites who reverse course and send the polity back into a more absolutist, extractive form.

When read together, these three forms of analysis demonstrate how difficult it is for advanced democracies to solve extremely pressing domestic crises. If it is difficult for advanced democracies with developed economies to solve domestic crises, then it is substantially tougher for nascent democracies with emerging economies to do so. Now – if agreement on the proper path for addressing crises is difficult on a domestic level, then it becomes exponentially more difficult to do so on a global scale. While multilateral, multinational institutions exist, their powers have always been limited, their decisions largely voluntary and their actual efficacy subject to the whim and caprice of powerful member states. Many of these post-World War II organisations have never been weaker. As a result, a panoply of global crises has proven impossible to resolve:

- nuclear proliferation;
- climate change;
- natural resource scarcity;
- pandemics;
- the alteration of inclusive democratic institutions – in the minority of nations that count as full democracies or flawed democracies (70 of 200 states) – into extractive and elitist institutions;
- the manner in which artificial intelligence, automation and technological disruptions lead to
  - permanent technological unemployment;
  - the manner in which social media undermines the capacity to have meaningful engagement (about facts, and thus social issues) within nations and between nations,
  - the demise of privacy (for which most individuals must be held accountable when they give it away for quick Facebook dopamine hits) and disturbing increases in the extent of public surveillance of individuals and communities by states that have adopted China’s near perfect big brother technology;
  - the use of such technology to conduct cyberwarfare between nations or to undermine elections (that would otherwise be free and fair);
- the fragmentation of many a democratic nation state over the last 30 years such it can no longer discharge
  - its ostensible purpose of providing basic public goods;
  - its original purpose of mediating civil strife under the rule of law;
  - its responsibility to contain non-state actors that undermine national sovereignty or distort their purpose (in what are relatively weak states);
  - control over the exercise of private power, especially by companies that possess so much pecuniary power that they can operate outside the lines of the various countries within which they function or determine what those lines are;
- the fragmentation of multinational institutions designed to promote collaboration and diminish conflict, and the demise of rule-governed systems intended to mediate international engagement themselves;
- a pandemic induced reversal in prior declining levels of inequality and extreme poverty; and

- the cause-and-effect nature of many of the aforementioned problems on the back of the deepening of autocratic rule in countries that have never known anything but autocracy and the rise of autocratic rule in countries with traditions of democratic rule (or at least a brief taste of what democracy might mean).<sup>39</sup>

It's obvious that getting over 200 nations and almost eight billion inhabitants to agree on the proper plan forward on any of the above issues is extremely tough. Indeed, we've only rarely seen collective global action that comes remotely close to success with respect to any of the wicked problems identified in this book.<sup>40</sup> And while we have seen progress across many fronts, it's been halting, at best. Even if we take two steps forward and just one step back, the speed at which these wicked problems have accelerated leaves us little time for dawdling. Any one wicked problem is difficult to solve. Given that that they interpenetrate and accelerate one another, whether we have sufficient time to save our planet and our species is an open question.

The primary problem addressed in this book turns on the ability of South Africa's faltering democracy to respond adequately to accelerating, disruptive advances in technology<sup>41</sup> and, in particular, to the shock of rapid automation and increasing permanent technological unemployment<sup>42</sup> in most sectors of the country's economy. Were these problems simply endogenous, a readily identifiable set of policy recommendations might be proffered. They are not.<sup>43</sup> These shocks are exogenous, global and potentially irreversible.

Different nations will fare differently. A vast number of actors (close to eight billion), of different sizes – international, national, sub-republic, communal, juristic and natural – will be affected by them. The possibility that such crises may well be beyond resolution has earned them my repurposed moniker 'wicked problems'.<sup>44</sup>

Permanent technological unemployment may not be South Africa's most pressing wicked problem. But it is surely one of many – several of which are addressed at length in this work. It might be a bigger problem than many readers think, even if other wicked problems would seem to demand greater attention.

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<sup>39</sup> This book doesn't assume that authoritarianism is a particularly new phenomenon. Rather, it holds that countries that have 'slipped' back into authoritarianism never actually possessed the practices, traditions or institutions to make democracy work. J Habermas *Beyond Facts and Norms* (1996). That populism in more established democracies has led to an increase in authoritarianism and corruption is a function of other ills. But it's also indicative of the fragility of democracy itself. T Judt 'Is There Really a Belgium?' (1999) *New York Review of Books* 11.

<sup>40</sup> A chemical weapons ban worked well until its recent demise in Syria. The international community's conclusion that apartheid constituted a crime against humanity still constitutes a success story.

<sup>41</sup> Technological advances have been argued to be linked to various forms of disruption in society – from violence to environmental destruction to distortions in information dissemination and collection that undermine both the private realm and the public realm. D Deudney 'Turbo Change: Accelerating Technological Disruption, Planetary Geopolitics, and Architectonic Metaphors' (2018) 20 *International Studies Review* 223.

<sup>42</sup> Permanent Technological Unemployment (PTU) is such a well-established phenomenon that a study from the USA considered the introduction of a tax for companies' use of robots. L Ionescu 'Should Governments Tax Companies' Use of Robots: Automated Workers, Technological Unemployment and Wage Inequality' (2019) 14(2) *Economics, Management, and Financial Markets* 64.

<sup>43</sup> B Zhao 'Monopoly, Economic Efficiency and Unemployment' (2012) 29 *Economic Modelling* 586.

<sup>44</sup> H Rittel & M Webber 'Dilemmas in a General Theory of Planning' (1973) 4 *Policy Sciences* 155.

*Wicked Problems Repurposed*

When Rittel and Webber wrote ‘Dilemmas in a General Theory of Planning’ in 1973, they could hardly be expected to have had the above list of ‘horribles’ on their mind. They addressed more mundane, local matters – and wicked problems would have been considered (by political economists) to be a somewhat more complex species of problems of collective action. As we shall see, this original intent reappears in more current literature that treats fairly common problems of collective action as if they fit Rittel and Webber’s demanding set of criteria.

Some 47 years later, we do see well over a decalogue of global problems that actually sound more like Rittel and Webber’s dilemmas than the run-of-the-mill problems that actually existed at the time of writing. These problems are not mere stumbling blocks. In the absence of any form of global governance – over both political and economic affairs – many of the problems adumbrated above have the capacity to deleteriously affect the foundations upon which progress, as we know it, turns – or to bring the world to a halt – either on their own, or as we have seen in the prologue, in concert with one another. As exogenous threats, it’s a trite proposition that they remain beyond the capacity for resolution by individual nation-states.

Given the dearth of global cooperation, it’s worth assessing how one wicked problem – permanent technological unemployment – might, along with such other wicked problems such as climate change, natural resource scarcity, nuclear proliferation and pandemics, undermine our flawed democracy’s efforts to create more inclusive political and economic institutions. To be sure, this across-the-board institutional failure is a complicated matter (and not just a function of wicked problems). This book addresses as many of those co-existing or pre-existing conditions as possible. It also goes without saying that the long shadow of apartheid and colonial rule plays a critical role in South Africa’s failure to flip the switch from racist, minority, totalitarian rule to the inclusive democracy to which the Constitution aspires. That brutal history – lived over and over again over the past 26 years – constitutes the backdrop against which any negative assessment of present-day South Africa must be evaluated. At the same time, no book can possibly account for ‘everything’ that has gone wrong in this country during the past 26 years. It’s enough to shine the light on a number of areas in which post-apartheid South Africa has failed and continues to fail – and to which less attention has been paid by other scholars. While our brutal history and more recent stories of corruption are going nowhere, the manner in which the wicked problems addressed in this book are accelerating require immediate attention. To put it more colloquially, those who wish to win the last war will fail unless they address, contemporaneously, an array of new wars being fought here and around the world.

Whether South Africa can overcome its ongoing paralysis and create genuinely inclusive political, social and economic institutions is, formally, an open question. Similarly, whether South Africa can pivot quickly in order to address the specific problems addressed in this work remains a highly contingent, unpredictable affair.

However, that South Africa is at a critical juncture is beyond question. Its state institutions are weak, its civil society thin, and its economy in free fall. That any turnaround is also contingent upon the successful address of a large number of exogenous crises only makes its response to this critical juncture that much more challenging.

*Wicked Problems in South Africa: Small Wins, Overall Failure*

Because this book is written from a pragmatic perspective, it remains ‘notionally’ optimistic. My colleagues Firoz Cachalia, Jonathan Klaaren and Theunis Roux have reminded me that as the author of previous works that took solace in the positive, cumulative effect of small wins, I ought not in good faith give up on the possibility that small wins at the domestic, regional and global levels might enable us to beat back the deleterious effects of some of the wicked problems that we confront today. Despite these collegial nudges, this book strikes out in a related, but starkly different direction. South Africa currently lacks the capacity to solve its own endogenous problems of permanent technological unemployment. This depressing departure point flows from four fairly well-documented component parts.

First. Humanity, today, finds itself beset by a rather large cohort of wicked problems. I have already introduced this gallery of ghouls above. While South Africa may be experiencing a particularly acute form of political and economic paralysis, no country on the planet, and thus no inhabitant, is immune from the effects of these interlocking wicked problems.

Second. Technological unemployment – a 200-year-old phenomenon first identified by David Ricardo – currently poses a risk to billions of abjectly poor, working-class and middle-class individuals whose livelihoods and skills can be increasingly replaced by machines and other forms of automation. What makes this period of technological unemployment different is that it lacks the possibility of reinstatement (of workers) with comparable or improved compensation. What was once simply technological unemployment (that came and went with productive advances in technology that freed up workers to pursue new, more remunerative pursuits) has become permanent technological unemployment. The stuff that was once the domain of science fiction and social satire is the reality that we confront today. As Barrero, Bloom and Davis explain in their May 2020 model:

Even if medical advances or natural forces bring an early resolution to the crisis, many pandemic-induced shifts in consumer demand and business practices will persist. Thus, much of the near-term reallocative impact of the pandemic will also persist, as indicated by our forward-looking reallocation measures. Drawing on our survey evidence and historical evidence of how layoffs relate to recalls, *we estimate that 42 percent of recent pandemic-induced layoffs will result in permanent job loss*. If the pandemic and partial economic shutdown linger for many months, or if pandemics with serious health consequences and high mortality rates become a recurring phenomenon, there will be profound, long-term consequences for the reallocation of jobs, workers and capital across firms and locations.<sup>45</sup>

Third. As I have already noted, COVID-19 South Africa finds itself in the unenviable position of having an official unemployment rate of 50% and an unemployment rate amongst youth that rockets to close on 80%. The absence of skills and limited education of the majority of South Africans makes them both ill-suited to the demands of a new technologically innovative economy and more likely than not to be replaced, over time, by machines or AI programmes that no longer require basic labour and or even significant components of more sophisticated labour.<sup>46</sup> The penultimate draft of this book’s analysis

<sup>45</sup> J Barrero, N Bloom & S Davis ‘COVID-19 is also a Reallocation Shock’ *Working Paper No. 2020-59, Becker Friedman Institute, University of Chicago School of Business* (May 2020) 5. (Emphasis added)

<sup>46</sup> D West *The Future of Work: Robots, AI and Automation* (2018); M Ford *The Rise of the Robots: Technology and the Threat of a Jobless Future* (2015); M Ford *Architects of Intelligence: The Truth about AI from the People Building It* (2018); A Agrawal, J Gains & A Goldfarb *Predication Machines The Simple Economics of Artificial*

of the public and private sectors suggested that South Africa could lose upwards of 67% of current jobs by 2030. The jump from 30% to 50% unemployment in 2020 portends an acceleration of such permanent job losses to somewhere between now and 2025.

Fourth. The Constitution, and the democratic structures of governance envisaged therein, has little to say about this particular wicked problem – much as it only glancingly speaks to the actual production of the most important public goods.<sup>47</sup> While the basic law is not entirely silent on matters of individual agency or the role that various actors have to play in the creation and delivery of essential public goods, these matters are properly left to a broad array of political, economic and social actors. Courts and Chapter 9 Institutions – designed to support our constitutional democracy – can use investigations, publications and decisions that uphold the rule of law to keep the train on the tracks a bit longer. However, this problem can only be solved by political leadership and a cooperative civil society.

Despite the global economy's current decade-long expansion though the end of 2019, South Africa during this period contracted and looks more and more like a 19th century plantation economy gone to seed. Hot money chasing high interest rates and a bourse that still punches well-above its weight had kept the rand strong as well as maintaining the state's ability to borrow money to support paying the interest on accumulating debt, modest infrastructure improvement and limited expansion of social welfare programmes. But for all the new-found talk of inward investment ('autarky'), more capital still flows out than in. Moreover, since the last of the three rating agencies downgraded South Africa to junk in March of 2020, followed by the implosion of the economy in the 2nd quarter of 2020, the state has no had choice but to borrow money from lenders of last resort just to pay the interest on public debt.<sup>48</sup> Such straightened circumstances will leave the state little room to pursue programmes that improve the long-term lot of its 59.2 million denizens.<sup>49</sup> Radical redistribution may not even produce short-term solace.<sup>50</sup> But a dramatically

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*Intelligence* (2018); R Susskind & D Susskind *The Future of the Professions: How Technology Will Transform the Work of Human Experts* (2017).

<sup>47</sup> S Woolman 'South Africa's Aspirational Constitution and Our Problems of Collective Action' (2016) 32 *South African Journal on Human Rights* 1; C Alchen & L Bartels *Democracy for Realists: Why Elections Do Not Produce Responsive Government* (2016).

<sup>48</sup> African News Agency 'National Treasury Warns of Debt Spiral, Refutes Criticism of Reneging on Spending Commitments' *Polity* (3 July 2020), accessed at <https://www.polity.org.za/article/national-treasury-warns-of-debt-spiral-refutes-criticism-of-reneging-on-spending-commitments-2020-07-03>. Treasury conceded that debt would exceed 140% of GDP within five years.

<sup>49</sup> J Cronje 'Moody's Cuts South Africa's Credit Rating to Junk' *Fin24* (27 March 2020), accessed at [www.fin24.com/Economy/just-in-moodys-cuts-south-africas-credit-rating-to-junk](http://www.fin24.com/Economy/just-in-moodys-cuts-south-africas-credit-rating-to-junk). Moody's cut South Africa's sovereign credit rating to subinvestment grade. As a result, the country now has a junk rating from all three major international rating agencies. Fitch and Standard & Poor's downgraded South Africa in 2017. See also C Bisseker 'Junked: What Else Could Possibly Go Wrong for South Africa' *Business Live* (2 April 2020), accessed at <https://www.businesslive.co.za/fm/features/cover-story/2020-04-02-junked-what-else-could-possibly-go-wrong-for-sa/>. Colleagues who bemoan the influence of these rating agencies forget that South Africa requested ratings so that it could fund public works programmes through government bonds sold on an open market – and that South Africa possessed an A+ rating through 2006. It doesn't take a rocket scientist to figure out why things started going south in 2007.

<sup>50</sup> P Harms & S Zinka 'Limits to Redistribution in a Democracy: A Survey' (2003) 19 *European Journal of Political Economy* 651. Harms and Zinka review arguments that might be classified into two categories: (a) whether it is the properties of the political process that prevent the poor from politically implementing their will, or (b) whether it is in the self-interest of the poor to refrain from radical redistribution. As academics

shrinking fiscus (R300 billion smaller in 2021) and other economic constraints make substantial rearrangement in income patterns across South Africa highly unlikely – even assuming that significant improvements in education, training and reskilling were possible.

Of course, all is not lost until all hope has disappeared. While a fully inclusive democracy is not in the immediate offing, we might be able to create a Basic Income Scheme (BIS) that keeps all boats afloat. A BIS, tax reform and reorganising domestic institutions – with a simultaneous improvement in regional and global institutions – hold out some promise of a more habitable and inclusive polity.

#### D. This Monograph as an Exhalation

Eulogy. Elegy. Exhortation. Yes, alliteration reflects a weak writing style.

My mentor, Richard Adelstein preferred ‘elegy’ over ‘eulogy’. While poetic, the ruminations in this work hardly strike the nostalgic tone associated with elegies. South Africa is not dead yet. A eulogy thus seems premature. An exhortation is more in line with a manifesto. This book is not meant to galvanise any given community. It limits its horizons to providing as close a description as is possible of the problem of permanent technological unemployment as well as other wicked problems that a country very much on the tipping point must confront. In Paul Krugman’s felicitous turn of phrase: it separates what we ‘want to be true’ from ‘what is true’.

It’s an exhalation, as the proverb at the outset suggests. There’s no sense, so far as I can tell, in hoping that the Constitution will transform South African society. Likewise, it seems utterly pointless to fight the last war, and to continue to describe the negotiated settlement that led to a constitutional democracy as a ‘sell-out’ that left virtually all of the hideous structures of apartheid and colonial rule in place. Both legal schools of thought fail to come to grips with politics, and democratic politics, in particular.<sup>51</sup> Democracies are messy affairs – and the long arc of history of inclusive polities (with inclusive economies) zigs and zags, rather than bends, toward justice. Democratic majority rule since 1994, along with a Constitution that provides the scaffolding for democratic politics, has scored palpable victories. And what of *atonement*? That’s a reasonable question. The absence of genuine concrete reparations by the most privileged South Africans reflects but one of many political failures over the last 26 years.<sup>52, 53</sup>

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like to tell one another, it takes very little money to make one happy. In a largely poor, notionally middle-income country, it takes ‘very little’ until colleagues start to take the care of the health, education and general wellbeing of their kin, kith and clan into account, first and foremost.

<sup>51</sup> S Woolman ‘Understanding South Africa’s Aspirational Constitution as Scaffolding’ (2015/2016) 60 *New York Law School Law Review* 401; F Cachalia ‘Democratic Constitutionalism in the Time of the Postcolony: Beyond Triumph and Betrayal’ (2018) 34 *South African Journal on Human Rights* 375; F Cachalia ‘Precautionary Constitutionalism, Representative Democracy and Political Corruption’ (2019) 9 *Constitutional Court Review* 23; T Roux ‘Transformative Constitutionalism and the Best Interpretation of the Constitution: Distinction without a Difference’ (2009) 20 *Stellenbosch Law Review* 258.

<sup>52</sup> The real question is, as Darren Walker, the African-American president of the Ford Foundation, put it: ‘Are You Willing to Give Up Your Privilege? Philanthropy Alone Won’t Save the American Dream’ *The New York Times* (25 June 2020), accessed at <https://www.nytimes.com/2020/06/25/opinion/sunday/black-lives-matter-corporations.html>. My answer to that question appears in Chapter V. The privileged have failed to atone for the sins of the past and continue to benefit from them.

<sup>53</sup> E Stoddard ‘Another SOE Tale of Woe: Land Bank Defaults on Loan’ *Daily Maverick* (21 April 2020),

Some policy interventions might mitigate the ill effects of those wicked problems that have already begun to wash over us, like one tsunami after another. However, a government and its partners, public and private, that has ransacked the fiscus during decades of corrupt, apartheid-like patronage systems and has subjected South Africans to perpetual policy paralysis over the course of the Mbeki, Zuma and Ramaphosa years is *unlikely* to deliver the public goods that we require.<sup>54</sup> Again, given my precommitments to experimentalism, and flourishing, as well as an Arendtian understanding of what can be accurately and precisely said about a particular historical moment in the moment, *unlikely* does not mean *absolutely impossible*.

This exhalation recognises that it is pointless to try to take back ‘the spoken word, the sped arrow, [and] ... the past life.’ However, by describing the enormity, destructiveness and largely intractable nature of a cohort of wicked problems that we South Africans face, I hope that we, collectively, will not ‘neglect’ current and future ‘opportunities’ to mitigate the damage that has been done. As my grandmother used to say: ‘It could be better, but it could also be “verse”’. It remains within our rather limited remit to ‘do the best that we can’.

### E. The *Mise en Scène*: The Undeniable Truth in Statistics

In 2015, South Africa’s official unemployment stood at 27.4%. However, that figure discounted persons who had never sought or who had stopped seeking employment, and thus did not reflect a real rate of over 45%.<sup>55</sup> Three years later in 2018, South Africa’s GDP contracted twice in successive quarters: by –2.6% in Q1 and –0.7% in Q2.<sup>56</sup> The economy

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accessed at [https://www.dailymaverick.co.za/article/2020-04-21-another-SOE-tale-of-woe-land-bank-defaults-on-loan/?utm\\_](https://www.dailymaverick.co.za/article/2020-04-21-another-SOE-tale-of-woe-land-bank-defaults-on-loan/?utm_). Yet atonement alone – in the form of land reform or redistribution of wealth – will not provide answers to wicked problems such as permanent technological unemployment.

<sup>54</sup> If that last sentence constituted this book’s last glancing mention of the topic of state capture, then I’d be thrilled. But the basic truths about politics reflected in the term ‘state capture’ make further limited mention of it unavoidable. The mere mention of a no-interest World Bank loan or an IMF rescue offer during the current pandemic led Ace Magashule, and supporters in COSATU and the SACP, to reject Tito Mboweni’s suggestion on ‘ideological grounds’. It’s not hard to guess his motivations. It’s ironic, given that the World Bank’s 2012 development theory driven report on South Africa predates the Alliance’s craven adoption of Radical Economic Transformation after losing ground to both the EFF and the DA. Still more mind-boggling is the President’s recent double-speak statement that ‘Covid-19 has brought about a total destruction of our economy ... Radical economic transformation must underpin the economic future that we will need to craft going forward.’ D Erasmus ‘Radical Economic Transformation Best for SA post-Covid-19, says Ramaphosa’ *City Press* (6 May 2020), accessed at <https://www.news24.com/citypress/news/radical-economic-transformation-best-for-sa-post-covid-19-says-ramaphosa-20200506>; C Cilliers ‘Magashule and Co Fear IMF Bailout Will Loosen Their “Mafia-like Grip” on SA – Mashaba’ *The Citizen* (7 April 2020), accessed at <https://citizen.co.za/business/business-news/2265639/magashule-and-co-fear-imf-bailout-will-loosen-their-mafia-like-grip-on-sa-mashaba/>. See also L Tandwa ‘ANC, Partners Turn to Ramaphosa to Stop Mboweni Calling on World Bank, IMF for Bailout’ *News 24* (6 April 2020), accessed at <https://www.news24.com/SouthAfrica/News/anc-partners-turn-to-ramaphosa-to-stop-mboweni-calling-on-world-bank-imf-for-bailout-20200406>. As previously noted, both reason and necessity prompted the government to work out a \$4.3-billion loan from the IMF, as well as additional funds from the World Bank and the BRICS Bank.

<sup>55</sup> [www.tradingeconomics.com](http://www.tradingeconomics.com) (October 2015).

<sup>56</sup> ‘The Economy Shrinks by 0.7% in Q2: 2018’, *StatsSA*, accessed at [www.statssa.gov.za](http://www.statssa.gov.za).

officially entered a recession.<sup>57</sup> After a mild rebound, the GDP contracted by 3.5% in the first quarter of 2019 – the largest drop in a decade.<sup>58</sup> It likewise contracted in the third quarter of 2019 by –0.6%.<sup>59</sup> Finally, after cautious expectations of positive growth in the last quarter of 2019, Eskom suddenly announced that loadshedding would reach Level 6 and advised both commercial and residential consumers to expect daily, long-term outages.<sup>60</sup> The blackouts began in November 2019 and lasted through the middle of December (when businesses closed and the country went on its annual month-long vacation.) Whatever minor reversals in fortune the economy might have made in the fourth quarter were utterly undone by the utility’s inability to keep the lights on and the power flowing in November and December 2019. The economy contracted by 1.4% in the fourth quarter of 2019.<sup>61</sup> South Africa had thus experienced two recessions during the first two years of Cyril Ramaphosa’s presidency.<sup>62</sup>

<sup>57</sup> Despite the positive growth of 2.2% in the 3rd quarter of 2018 that officially ended the recession, the rand has subsequently weakened in the last year from R14/\$1 to R15.5/\$1 (as of September 2019). ‘The Economy Grows by 2.2% in Q3: 2018’ *StatsSA*, accessed at [www.statssa.gov.za](http://www.statssa.gov.za). The exogenous and endogenous factors that place the fiscus under increasing strain turn on (a) higher US interested rates which, in turn, make it difficult to service sovereign debt denominated in dollars; (b) a widening current account deficit; (c) the ongoing inability of the poorly managed and heavily indebted national utility, Eskom, to provide sufficient electricity for business and residents; (d) uncertainty related to constitutional amendments of Section 25 of the Constitution (land reform that allows for expropriation without compensation); (e) fears that without a clear victory by the ANC and the ability of President Ramaphosa to end factionalism within the ANC, the country will remain rudderless; (f) an inability to govern state-owned enterprises, whilst curbing payroll expenditures; (g) fallout from a decade of corruption as the Zondo Commission continues its investigation into State Capture. ‘The Rand is Plummeting – Here’s Why’ *BusinessTech* (8 December 2018); ‘Rand Slides as Current Account Widens’ *Reuters* (8 December 2018); R White ‘Eskom Needs to Get Basics Right’ *Eyewitness News* (8 December 2018).

<sup>58</sup> ‘The Economy Shrinks by 3.2% in Q1: 2019’, *StatsSA*, accessed at [www.statssa.gov.za](http://www.statssa.gov.za). That prior drop could be attributed to the great global recession of 2008–2009.) Eskom’s load shedding and government policy uncertainty in various sectors played a major role in a 10.8% contraction in mining, in an 8.8% slide in manufacturing and a 13.2% reduction in agricultural output.

<sup>59</sup> ‘GDP Contracts by 0.6% in Third Quarter’ *StatsSA* (3 December 2019), accessed at <http://www.statssa.gov.za/?p=12819>.

<sup>60</sup> Much like the guitarist who seriously informs his inquisitor that his amplifier goes to ‘11’ because ‘it’s louder’ in Rob Reiner’s ageless mock rockumentary *This is Spinal Tap* (1984), Eskom surprised everyone in mid-January of 2020 by announcing that loadshedding could go to Level 8 (because, I assume, it’s simply ‘louder’).

<sup>61</sup> ‘South African Economy Enters Recession as Q4 2019 GDP Contracts’ *Reuters* (3 March 2020), accessed at <https://www.cnn.com/2020/03/03/reuters-america-south-african-economy-enters-recession-as-q4-2019-gdp-contracts.html>.

<sup>62</sup> Again, it’s unfair to lay the blame for our current miasma at the feet of our current President. However, it’s taken him a full two years to identify ‘political patronage’ as ‘a’ [not ‘the’] root cause of the failure of the state to provide (a) those basic public goods required for each citizen to pursue her own comprehensive vision of the good; and (b) the structure required for all social actors, natural and juristic, to be productive and to contribute to the wellbeing of all of South Africa’s denizens. C Ramaphosa ‘Building a Capable State Our Top Priority’ *Weekly Newsletter from the President* (20 January 2020) as published in *PoliticsWeb* (2 February 2020), accessed at <https://www.politicsweb.co.za/comment/building-a-capable-state-our-top-priority>. President Ramaphosa writes, in a relevant part, as follows:

Walking through the streets of Kimberley and other towns in the Northern Cape a fortnight ago drove home the point that if we are to better the lives of South Africans, especially the poor, we need to significantly improve the capacity of the government that is meant to as improve their lives ... As

Many business leaders expected the economy to contract by 7% annually in 2020 (after shrinking by 50% in Q2) as COVID-19 shuttered business, and the pandemic itself ripped through the country and the rest of the world throughout the remainder of the year.<sup>63</sup> The business stimulus package has not provided meaningful assistance. For example, almost 200 billion rand in loans sat on the table when SMMEs proved too scared to take on the debt. What worked, as the rebound in the third quarter of 2020 showed: keeping the economy open.

The country's persistent absence of growth makes two recessions in two years seem almost irrelevant.<sup>64</sup> Let's also suppress the magnitude of COVID-19's negative economic effects.<sup>65</sup> It's the dirt-poor fundamentals, in a rapidly changing world, that are of greater cause for concern.

Eskom neatly captures the country's problems in a nutshell. Its inability to meet demand for electricity stems in part from major design flaws in two of its major coal-fired power plants – Medupi and Kusile – and the clear absence of a coordinated plan to ensure that supply meets demand.<sup>66</sup> Cut out the heart, and the brain stops working. The last Eskom

public representatives and civil servants we derive our legitimacy from our ability to act professionally as we serve the public and manage state resources to the benefit of the public. We also need to ensure that we embody the *Batho Pele* principles. Putting people first. It is through such an approach that we can have a state that places people and their needs at the centre ... A capable state starts with the people who work in it. Officials and managers must possess the right financial and technical skills and other expertise. We are committed to end the practice of poorly qualified individuals being parachuted into positions of authority through political patronage. There should be consequences for all those in the public service who do not do their work.

<sup>63</sup> J Cronje 'SA Economy Could Shrink by up to 17% in 2020 Despite Stimulus, Warns Business Alliance' *Fin24* (6 May 2020), accessed at <https://www.fin24.com/Economy/South-Africa/sa-economy-could-shrink-by-up-to-17-in-2020-despite-stimulus-warns-business-alliance-20200506>.

<sup>64</sup> T Mathe 'South Africa's GDP Slumps to Its Lowest in a Decade' *Mail & Guardian* (4 June 2019), accessed at <https://mg.co.za/article/2019-06-04-sas-gdp-slumps-to-its-lowest-in-a-decade/>.

<sup>65</sup> Less than four weeks after extreme suppression measures began in the United States, unemployment claims rose by nearly 16 million. US Treasury Secretary Steven Mnuchin warned the rate could reach 25% and US Federal Reserve economists predicted unemployment levels as high as 35%. Those numbers are depression-era figures. It's virtually impossible to overestimate the unemployment figures in South Africa, when mining, manufacturing and tourism (and aligned service industries) have come to a complete halt. K le Roux 'South Africa's Economy to Shrink by 23.5% in Q2: Africa's Most Developed Economy is Heading for a Very Cold Economic Winter, says ABSA Senior Economist Peter Worthington' *CapeTalk* (3 April 2020), accessed at <https://www.capetalk.co.za/articles/379782/south-africa-s-economy-to-shrink-by-23-5-in-2q-2020-absa-forecast>.

<sup>66</sup> A Ham 'Eskom Design Veteran Pinpoints Medupi and Kusile Faults' *BizNews* (13 May 2019), accessed at <https://www.biznews.com/thought-leaders/2019/05/13/eskom-medupi-kusile> and email:

The boilers – unlike older pre-1994 plants – were contracted out to international companies with experience in high grade, fast-burning coals in Australia and Japan, and not South Africa's lower grade, slower burning coal. This has resulted in three primary defects:

- Boiler internal volume and dimensions are undersized for the slow-burning coals used.
- The flue gas capacities are too high, causing excessive erosion of the burners, as well as of the furnace tubing.
- The change during the early contact stage from the tube mills originally specified, to vertical mills, was a major error: the price change was suggested by the contractor with a price reduction, which Eskom accepted. The pulverized coal fineness required [for effective and efficient burning] cannot be achieved [by mills designed for a different kind of coal] and [in addition, the error in mill choice means] the [extant] mill wear [is] excessive.

board's turnaround plan stated that loadshedding would occur through the end of 2021 and offered little hope that it might eliminate its massive debt – especially in the face of diminished demand.

Government paralysis manifests itself in a panoply of other forms. They encompass the absence of significant alteration of government policy in important arenas such as land reform; addressing other SOEs in distress (say, wrapping up SAA) or preventing the Land Bank from declaring bankruptcy;<sup>67</sup> the entanglement of the President himself in spats with the Public Protector;<sup>68</sup> and a halting corruption investigation by the Zondo Commission that has produced a lot of noise but revealed more about our riven politics than it has placed us back on the straight and narrow.<sup>69</sup> Finally, Ramaphosa's five-year silence as Deputy President means that he knowingly inherited a kleptocracy's debts and systemic breakdowns, and accepted the leadership of a fragmented political party incapable of governance after merely lopping off the last head. COVID-19 only laid bare the horrific nature of the country's mismanagement and the radical inequalities that the post-apartheid state had failed to adequately address.

With two recessions and a full-on depression-like contraction of the economy come increased job losses and lost job opportunities. But again, these problems are not of recent vintage. The first 2018 Quarterly Labour Force Survey noted an unemployment increase of 0.5%, offered conservative estimates of 'a decline of 90 000 people in employment', 'an increase of 102 000 people who became unemployed', and underlined a significant rise 'in the number of discouraged job seekers ... between the first and second quarters of 2018.'<sup>70</sup> In addition, the industry hardest hit by job losses was manufacturing '... 105 000 people [became] unemployed in that sector in the second quarter.'<sup>71</sup> I've already radically revised

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Each defect leads to breakdowns. Each breakdown requires that the power plants be taken offline and cooled down until sophisticated diagnostic tools can identify the particular problem. The continued breakdown of inappropriate and defective pieces takes the two plants offline, causes demand to dramatically outstrip supply and requires load-shedding throughout the country. The fix isn't easy. The significant cost of improving the local coal's poor reactivity cannot be justified – especially by an SOE over R500 billion in debt. The troubling decision to use vertical mills will continue to result in insufficiently well-ground coal that is unable to meet the boilers' stringent fineness requirements. Over a three week span in January and early February 2020, Minister of Energy and Mineral Resources Gwede Mantashe vacillated between defending (a) two (to nine) years of level 6 loadshedding, without seriously entertaining alternative forms or sources of energy, or (b) moving with alacrity to allow private power production, or (c) floating the idea of a second state-owned energy producer while allowing companies and municipalities to attempt to make up for the 11 GW (out of the necessary 31 GW) lost when three coal-fired plants are decommissioned over the next four years. Moreover, Mantashe has said nothing about Eskom's failure to use dedicated existing stores of coal, or National Treasury's rejection of a rate increase from coal supplier South32, necessary to keep both the Duvha and Kendal power stations running in Mpumalanga. T Jika & S Skiti 'New Load-Shedding Crisis Looms: The Treasury's Rejection of South32's Proposal to Increase the Value of Its Eskom Contract by R1.2-Billion Could Spark a Coal Shortage for the Parastatal' *Mail & Guardian* (31 January 2020), accessed at <https://mg.co.za/article/2020-01-31-new-load-shedding-crisis-looms/>.

<sup>67</sup> T Ngcukaitobi 'Clear Policies Needed for Effective Land Reform' *Mail & Guardian* (9 June 2019).

<sup>68</sup> See, e.g., *President of the Republic of South Africa v Public Protector of the Republic of South Africa and Others* [2019] ZAGPPHC 368 (8 August 2019).

<sup>69</sup> M wa Afrika & P Rampedi 'Ramaphosa Mised Parliament over Bosasa, Says Public Protector' *Sunday Independent* (9 June 2019).

<sup>70</sup> 'Quarterly Labour Force Survey' *StatsSA* (July 2018), accessed at [www.statssa.gov.za](http://www.statssa.gov.za).

<sup>71</sup> *ibid.*

those negative numbers downwards for 2019, 2020, 2021 and beyond. The point worth emphasising again is poor economic fundamentals.

More worrisome from the perspective of social stability are the numbers of unemployed youth, those aged between 15 and 34. They numbered 6 million of the total 9.3 million unemployed as at the end of the first quarter of 2019.<sup>72</sup> You can't double a 60% unemployment rate in 2020, but you can push it significantly towards 80%. Unemployed youth fall into the category of NEET – not in education, employment or training. Worse still, this cohort of unemployed and often unskilled persons now face the truly depressing prospect of never entering the workplace at all.<sup>73</sup> These staggering figures of unemployment, generally, and youth unemployment, in particular, constitute a recipe for social implosion.<sup>74</sup> It has already happened in pockets. The ongoing pressure on emerging markets,<sup>75</sup> a global downturn set off by trade wars<sup>76</sup> and now a long-term pandemic ripping through a fundamentally weak economy and an overmatched healthcare system are but three potential catalysts.<sup>77</sup>

<sup>72</sup> For more data on the 63.4% unemployment rate, see 'Unemployment Rate' *Trading Economics* (May 2019), accessed at <https://tradingeconomics.com/south-africa/unemployment-rate>; 'Youth-Aged Participation in the Labour Market' *StatsSA* (May 2019), accessed at <http://www.statssa.gov.za/?p=12121>. StatsSA's data has become increasingly unreliable as the budget for this essential government service has been repeatedly slashed. Without reliable data, it is difficult to formulate optimal policies, regulations or laws. J Rooi 'StatsSA Heading for 'Destruction' with Massive Cash Shortages' *City Press* (3 December 2019), accessed at <https://www.news24.com/citypress/News/stats-sa-in-money-squeeze-ahead-of-census-20191130>.

<sup>73</sup> A South African newspaper reported in 2017 that 60.3% of unemployed young people in South Africa have never worked before. D Yu 'The Lesser Known and Scarier Facts about Unemployment in South Africa' *Mail & Guardian* (4 September 2017), accessed at <https://mg.co.za/article/2017-09-04-the-lesser-known-and-scarier-facts-about-unemployment-in-south-africa>. Further, a 2018 study showed that people who are unemployed for less than nine months have a higher unemployment exit rate, while the 'probability of staying unemployed is constant for all those who were unemployed for a year or more.' This suggests the many young people who do not find employment are likely to get discouraged and stop trying to find a job relatively quickly. Generally, the study shows that the longer a person is unemployed, the less likely it is that they will be able to re-enter the job market. J Nonyana & P Njuho 'Modelling the Length of Time Spent in an Unemployment State in South Africa' (2018) 114 *South African Journal of Science* 70, 73, 75–76. The large number of persons who have never been employed has led to the creation of the term 'precariat' – as opposed to proletariat.

<sup>74</sup> S Woolman 'Is Xenophobia the Right Legal Term of Art? A Freudian and Kleinian Response to Loren Landau on the Violence in South African Townships' (2011) 21(2) *Stellenbosch Law Review* 285.

<sup>75</sup> A Hoffmann & G Schnabl 'Monetary Policies of Industrial Countries, Emerging Market Credit Cycles and Feedback Effects' (2016) 38(5) *Journal of Policy Modelling* 855; B Bonizzi & A Kaltenbrunner 'Liability-driven Investment and Pension Fund Exposure to Emerging Markets: A Minskyan Analysis' (2019) 51(2) *Environment and Planning A: Economy and Space* 420.

<sup>76</sup> D Steinbock 'US-China Trade War and Its Global Impacts' (2018) 4(4) *China Quarterly of International Strategic Studies* 515.

<sup>77</sup> RW Johnson 'On the Other Hand' *Fighting for the Dream* (2019) Chapter 13. By the end of December 2020, the South African Medical Association stated that a further lockdown would do nothing to repair a broken healthcare system, and that the nation had no choice but to keep the economy open in order to prevent people from starving. They based their conclusions on the fact that because the government coffers were empty, no further relief grants or packages were in the offing. 'SA Medical Association: Harder Lockdown Would Be Counterproductive', *EWN News* (9 January 2021), accessed at <https://ewn.co.za/2021/01/09/harder-lockdown-would-be-counterproductive-says-sa-medical-association>.

## F. An Outline of the Book

This book attempts to engage the problems of permanent technological unemployment, as well as predictable pandemics, climate and resource scarcity and nuclear proliferation. Chapter II adumbrates three related forms of problems of collective action and explains why the failure of nation-states to solve such problems – along with the absence of effective global democratic and inclusive political and economic institutions – impedes the resolution of *all truly* wicked problems. It analyses three wicked problems in detail. It then concludes by demonstrating how most wicked problems are exacerbated and accelerated by other wicked problems. Chapter III presents an economic history of (as well as two centuries of theories about) technological unemployment and a fairly new economic theory of permanent technological unemployment. In addition, it offers an overview of why technological disruption, automation and mass unemployment are gaining momentum, how they were already roiling the political and economic waters of most countries prior to 2020, and how COVID-19 has accelerated the shift from low-skilled labour to automation in some economic sectors, without the reinstatement effects that have generally followed prior industrial revolutions. Chapter IV looks at how this particular wicked problem will affect South Africa in both the near and the long term. Chapter V surveys an array of means for ameliorating the negative consequences of permanent technological unemployment – from taxation, to behavioural economics geared toward the bottom of the pyramid, to basic incomes schemes, to more inclusive democratic, regional and global institutional arrangements – at the same time as it maintains that we ought to adopt a ‘doing the best that we can’ approach with respect to the various solutions on offer. Chapter VI – The Epilogue – doubles down on the Job-like travails of wicked problems and plays the role of Cassandra by reminding us that the ‘small wins’ of experimental governance are unlikely to forestall the failure of the South African state.

## CHAPTER II

# Wicked Problems Defined and Repurposed, Problems of Collective Action Distinguished, and the Challenges that Wicked Problems Pose to South Africa's Not Quite So Inclusive Democracy

### A. Wicked Problems Properly Defined and their Difference from Problems of Collective Action

Wicked doesn't mean evil. *Wicked problems* possess an array of characteristics that earned them this moniker a half century ago. Rittel and Webber defined wicked problems as pressing public challenges, even crises, that may be impenetrable (so far as current scientific understanding goes) and insoluble (given the limited political, social and economic means at our disposal).<sup>1</sup> Rittel and Webber's decalogue, as I have repurposed it, possesses the following defining, but not exhaustive, list of features:

- They lack a definitive formulation.
- No metric exists to identify the point at which a solution has been discovered.
- There may be better or worse outcomes as opposed to true or false results.
- An absence of adequate tests makes it difficult to vindicate a final optimal outcome.
- Some problems tend to require one-shot responses rather than allow for trial and error.
- The complexity of a problem complicates our ability to assess whether all possible solutions have been identified.
- The specific nature of wicked problems often limits the usefulness of a solution to one wicked problem to another wicked problem.
- One wicked problem might actually be a function of another wicked problem; or, worse still, wicked problems of different kinds might actually reinforce and accelerate one another.
- Significant discrepancies may obtain between explanations for and the extent of a wicked problem.
- Policymakers often have no margin for error given the gravity of the wicked problem as well as the possibility of severe unintended negative consequences that might flow from their proposed solutions.<sup>2</sup>

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<sup>1</sup> H Rittel & M Webber 'Dilemmas in a General Theory of Planning' (1973) 4 *Policy Sciences* 155. Churchman offered a roughly similar – highly abbreviated – elaboration in a slightly earlier work. See also C Churchman 'Guest Editorial: Wicked Problems' (1967) 14(4) *Management Science* B141–B142.

<sup>2</sup> Rittel & Webber 'Dilemmas in a General Theory of Planning' (1973) 4 *Policy Sciences* 155, 161–167 (rewritten for clarity by this author.)

That's a rather sobering (if abstract) list. But before we identify problems that satisfy most of the decalogue's desiderata,<sup>3</sup> it's important to distinguish this conception of wicked problems from (a) three primary forms of collective action problems which all democracies must confront and (b) a contemporary description of wicked problems that does not ignore the manner in which such problems reinforce one another and the extent to which they have passed the point where collective global action could adequately contain all, or even most, of them.

Before jumping in, it's worth distinguishing between an extraordinary statement made some time ago on behalf of wicked problems, and the genuinely unique and readily identifiable features of wicked problems that trouble us now. In his 1987 talk, 'The Reasoning of Designers', Rittel makes the rather extravagant claim that: 'It is one of mysteries of our civilization that the noble and prominent activity of design [or social planning] has found little scholarly attention until recently.'<sup>4</sup> He pulls back ever so slightly from this claim and correctly observes that: 'Everybody designs sometimes; nobody designs always. Design is not the monopoly of those who call themselves designers. From a downtown development scheme to an electronic circuit; from a tax law to a marketing strategy ... all of these are products of the activity called design.'<sup>5</sup> Rittel puts his finger on the very problem that plagues many so-called designers:

All [social planners] want to avoid mistakes through ignorance and spontaneity. They [ought] to think before they act. Instead of immediately and directly manipulating their situation [as many idealists and rationalists do], they [ought to] subject their ideas and design to *trial and error* until these assume the desired shape.<sup>6</sup>

Rittel then identifies the scientific method – experimentation and then nudging individuals from negative defaults to positive heuristics – as the defining feature of social planners: '[Designers and social planners must pursue well tested theories – through experimentation, trial and error and reflexivity] before they think up a course of action [to which they] thoroughly ... commit themselves [and others].'<sup>7</sup>

Despite Rittel's declaration, experimentation and trial and error hardly constitute groundbreaking methods in the natural sciences, the social sciences, or for that part, in inclusive and competitive forms of political and economic planning. (The manifold problems of central planning may well have been on Rittel's mind at the time he delivered his paper.) First, the scientific method established itself three to four centuries ago – despite ecclesiastical and political resistance. Second, testing a given hypothesis, before securing the social support necessary to generate the collective action required to produce public goods, can hardly be said to be new to those domains that fall within the two-and-a-half

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<sup>3</sup> To be classified as a 'wicked problem' does not mean that the problem possesses all such features. But the features do help, when viewed collectively in my repurposed characterisation, to differentiate wicked problems from run-of-the mill problems of collective action.

<sup>4</sup> H Rittel 'The Reasoning of Design' International Congress on Planning and Design Theory, Boston (August 1987), University of California, Berkley (1987) and the University of Stuttgart (1988), accessed at [https://books.google.com/books/about/The\\_reasoning\\_of\\_designers.html](https://books.google.com/books/about/The_reasoning_of_designers.html) and <https://www.scribd.com/document/373397619/Rittel-1988-Reasoning-of-Designers-pdf>.

<sup>5</sup> *ibid.*

<sup>6</sup> *ibid.*

<sup>7</sup> *ibid.*

century purview of political economy.<sup>8</sup> Rittel and Webber's most meaningful insights turn, as we will see, on the difficulty in alighting upon solutions to large-scale, extremely complex, social problems, as well as the absence of global institutions with the coercive power necessary to secure near universal agreement on the solutions to these crises.

## B. Three Types of Problems of Collective Action, Broadly Conceived

*How radically heterogeneous, naturally and socially determined, individuals, groups, associations, communities and sub-publics act as both breaks and virtuous circles on the creation of a just and fair political economy*

*The Selfless Constitution*<sup>9</sup> and other prior works<sup>10</sup> have described how the social practices, traditions, endowments and communities into which all persons are born fundamentally determine decisions taken by radically heterogeneous individuals, groups, associations, communities, sub-publics and states.<sup>11</sup> In short: 'Meaning Makes Us'. That bumper sticker flows from the following basic propositions, crudely put. First. There's rarely a thought in your head or an action that you undertake that is not directly sourced from neurological hard-wiring, pre-existing cognitive routines, or shared social practices. Second. You are 99.99% borrowed hardware and software. Third. Your trivially unique mix of built-in and learned dispositional states and roles makes *YOU* a 'centre of narrative gravity' or a densely populated 'me' full of competing and complementary 'selves'.

Let's break down that rather simple set of interlocking propositions into smaller parts.

We, as a species, tend to overemphasise dramatically the actual space for self-defining choices. Our experience of individuality or personhood or (self-)consciousness, is actually a function of a complex set of narratives over which we exercise little in the way of (self-)control. Our notion of 'individuality' is a function, a very useful by-product, of a complex array of semi-independent neural-muscular networks that control the body's journey through life. This complex set of dispositional states reflects both the deep grammar of our brains (and bodies) and the social endowments that have evolved over time to determine various patterns of behaviour.<sup>12</sup>

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<sup>8</sup> Rittel should not be denied credit for the originality of his work, or the extent to which it enlivens my own work and that of others. Behavioural economics, political science and choice architecture owe some degree of their explanatory power to this imaginative line of thinking.

<sup>9</sup> S Woolman *The Selfless Constitution: Experimentalism and Flourishing as Foundations of South Africa's Basic Law* (2013).

<sup>10</sup> S Woolman & B Fleisch *The Constitution in the Classroom: Law and Education in South Africa, 1994–2008* (2009).

<sup>11</sup> All individuals, groups, associations, communities, sub-publics and states are radically heterogeneous – as an epistemological matter – no matter how much we would like to think of them as unified, homogenous entities.

<sup>12</sup> It should be apparent from this brief account that the self or the mind is a valuable abstraction and not an entity that stands back from experience and then dictates to the body what it does in response to various stimuli. G Ryle *The Concept of Mind* (1949) iv. Ryle describes as 'category mistakes' the distinctions we often make between (a) mind *and* body, or (b) in my parlance, a unitary physical location for the conscious self *and* the product of significant amounts of largely unconscious, regionally distributed, parallel processing that ultimately constructs a transient global neuronal workspace which spans large, but ever-changing, portions of the brain.

Each individual, to use once again Daniel Dennett's felicitous phrase, is just 'a centre of narrative gravity'.<sup>13</sup> Each centre of narrative gravity – each individual (you or I) – is a set of different but overlapping narratives (selves). Each narrative, or storyline, reflects a complex set of experiences and dispositional states organised around a particular form of behaviour. 'I' – Stu Woolman – consist of narratives that flow from my roles as a male, as an academic, as a driver, as an English speaker, as an avid movie goer, as a son of Ephraim, as a brother of David, as a permanent resident of South Africa, as a golfer, as a cook, as a culturally Jewish atheist, as a disabled person, as a friend of George, Karabo and Justine, as a teacher, as a New Yorker, as bespectacled and bald, as the Editor-in-Chief of both *Constitutional Law of South Africa* and the *Constitutional Court Review* and as a homeowner in Johannesburg. The list of narratives is not infinite (nor is it meant to be exhaustive). It could, however, be almost as long and sundry as 'my' life of the last 56 years.

The 'individual me' then is that centre of narrative gravity, that self-representation, which holds together and organises information, various storylines and dispositional states that make up my sense of 'me'. It is unique. The variety of narratives or selves that make up 'me' is different in a sufficiently large number of respects to allow me to differentiate myself as an 'individual' from any other corporeal 'individual'. It is relatively stable. Though my narratives and dispositional states may change or accrete over time, my self-representations enable me to view my corporeal being as a single individual over time. But again, keep in mind that the individual, and its various narratives or selves (some consistent, some conflicting), is thoroughly a function of physical capacities and social practices over which I have little or no control.<sup>14</sup>

<sup>13</sup> For more on the self as a centre of narrative gravity, see D Dennett *Consciousness Explained* (1991) 167–171; D Dennett *Sweet Dreams: Philosophical Obstacles to a Science of Consciousness* (2005). The pathbreaking experiments of empirical psychologists B Libet and W Grey Walters provided Dennett with a well-established framework for understanding delayed conscious awareness of 'unconsciously' initiated action. In layperson's terms, these experiments showed how what appeared to be 'conscious, freely willed action' could, in fact, be functions of pre-determined, unconsciously initiated neural networks. B Libet 'The Experimental Evidence for Subjective Referral of Evidence Backward in Time: Reply to PS Churchland' (1981) 48 *Philosophy of Science* 182; B Libet 'Time of Conscious Intention to Act in Relation to the Onset of Other Cerebral Activities (Readiness Potential): The Unconscious Initiation of a Freely Voluntary Act' (1983) 106 *Brain* 623; WG Walters' *Presentation to the Osler Society* (1963) as reported in D Dennett *Consciousness Explained* (1991) 167–171.

<sup>14</sup> R Dawkins *The Selfish Gene* (1976); R Dawkins *The Extended Phenotype* (1982). Richard Dawkins provides useful accounts of how patterns of learned behaviour – memes – replicate themselves over time through individuals, groups and societies. This way of understanding the world is actually fairly commonplace, across cultures and around the world. As Martin Heidegger writes:

[That shared practices are constitutive of our being] implies that the world is already given as the common world. It is *not* the case that there are first individual subjects which at any given time have their own world; and that the task of putting them together, by virtue of some sort of arrangement, ... one would have a common world. This is how philosophers imagine things when they ask about the constitution of the intersubjective. We say instead that the first thing that is given is the common world.

We take pleasure and enjoy ourselves as one takes pleasure, we speak about something as one speaks.

M Heidegger *Lectures on the History of the Concept of Time* (1924).

Ludwig Wittgenstein puts the matter pithily: 'What has to be accepted, the given, is, one could say – forms of life.' L Wittgenstein *Philosophical Investigations* (1953, GEM Anscombe (ed)) Book II xi 226. Magobe Ramose notes that the core concept of an African ethic of ubuntu – 'Umuntu ngumuntu ngabantu' (a person is a person through other people) – not only gives the community's interests priority over the individual's interests as a normative matter, but also contends that an individual's 'being' is entirely contingent upon the existence of a community, and a community that itself reaches back and forward in time to embrace

And remember, like a necklace of pearls, this individual – this constellation of selves or densely populated ‘mes’ – is delicate indeed.<sup>15</sup>

Despite the ‘general’ absence of choice in the determination of individual identity, we ought not to lose sight of the fact that the human brain – the body as a whole – is an extraordinarily powerful *problem-solving mechanism*. Its uniqueness follows from its ability to address and to overcome novel obstacles through complex neurological feedback mechanisms that enhance our ability to engage in abstract, future-oriented, action-predictive behaviour. Our problem-solving capacity – our regular inquiries about the nature of our environment, our ability to penetrate the future – is where our freedom ultimately resides.

While this account of individual agency differs dramatically from that version drawn from our deeply embedded folk psychology of ‘free will’, this light determinism remains optimistic. As Dennett writes:

Free will is not an illusion, not even an irrepressible or life-enhancing illusion. When we look closely at the sources of our suspicion and dread, we find again and again that they are not indisputable axioms or overwhelmingly well-supported empirical discoveries, but unfocused images, hastily glanced at – like shadows on the bedroom wall that take on an apparent robustness and menace because we do not look at them closely ... What we want when we want free will is the power to decide our courses of action, and to decide them wisely, in light of our expectations and desires. We want to be in control of ourselves, and not under the control of others. We want to be agents, capable of initiating, and taking responsibility for, projects and deeds. All this is ours, I have tried to show, as a natural product of our biological endowment, extended and enhanced by our initiation into society ... We want, moreover, to have enough elbow room in the world so that when we exercise these powers, it is not always a matter of settling for the only desperate course of action that has a chance of fulfilling our desires. We can have this elbow room as well, and it is worth striving for, but not guaranteed. There are real threats to human freedom, but they are not metaphysical. There is political bondage, coercion, the manipulation inducible by the dissemination of misinformation, and the ‘forced move’ desperation of hunger and poverty. No doubt we could do a lot more to combat these impositions on our freedom, were it not for another sort of straightjacket we often find ourselves wearing: the curious sort of self-imposed bondage that we create by the very exercise of our freedom, and in the acknowledgement of our responsibility for the chains, ropes, strings and threads of commitment (explicit and tacit) that tie us to family and friends, that tie us to life projects, and that make us increasingly immovable by appeals for radical action.<sup>16</sup>

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all who have existed and all who will exist in that community. M Ramose ‘The Philosophy of uBuntu and uBuntu as a Philosophy’ in M Ramose, *African Philosophy through Ubuntu* (1999) 50–65.

<sup>15</sup> The theory of the individual qua radically heterogeneous, naturally and socially determined ‘selves’ does not assume a unitary supervisory ‘self’ over time. D Parfit *Reasons and Persons* (1984); D Parfit ‘Divided Minds and the *Nature* of Persons’ in C Blackmore & S Greenfield (eds) *Mindwaves* (1987) 19. For the classic statement of such a disaggregated view of self, see D Hume *A Treatise of Human Nature: Being An Attempt to Introduce the Experimental Method of Reasoning in Moral Subjects* ((1739) (eds) D Norton & M Norton, 2000):

[W]hen I enter most intimately into what I call *myself*, I always stumble upon some particular perception or other, of heat or cold, light or shade, love or hatred, pain or pleasure. I can never catch myself at any time without a perception and can never observe anything but the perception.

<sup>16</sup> D Dennett *Elbow Room: The Varieties of Freedom Worth Wanting* (1984) 169.

It follows, from this account, that we also tend to overemphasise dramatically the actual space for rational collective deliberation. We often speak of the associations that make up our lives (and give both meaning and content to the various ‘selves’ that make up the individual) as if we were largely free to choose them or make them up as we go along. I have suggested why such a notion of choice is not true of us as individuals. It is also largely not true of associational life. To acknowledge that there is a ‘radical givenness’ to our social world and that ‘meaning makes us’ explains why ‘conditioned choice’ results in little or no explanatory power being lost when we substitute ‘flourishing’ for ‘freedom’. As Michael Walzer contends, we ought to call decisions to reaffirm our conditioned commitments to remaining who we already are, as ‘freedom simply, without qualification’. We may even wish to follow Walzer (at least part of the way) when he concludes that such ‘freedom’ is ‘the only “freedom” that free men and women can ever have’.<sup>17</sup>

Of course, as a radically egalitarian pluralist, Walzer would certainly agree that no individual and no group ought to allow their current conditions to constitute hard boundaries on their freedom. Indeed, *Spheres of Justice* must be read as barring second-class citizenship in any truly fair and equal society. Thus, as I have argued elsewhere, while communities and associations within South Africa ought to be able to create and to sustain rules regarding membership, voice and exit, they may not relegate any of their existing members to second-class citizenship.<sup>18</sup> (The Constitutional Court recognised this negative dimension of association in *New National Movement*.<sup>19</sup>) Should individuals who face such discrimination – and abridgements of their rights to dignity and equality – wish to exit their ‘traditional’ communities, then the community and the state must share the burden of providing them with the material and immaterial means to pursue their own, alternative, comprehensive vision of the good.<sup>20</sup>

I have also argued that any just and fair political order can serve the ends of both traditional ways of being and novel ways of being – *despite the fact that individuals and the communities that they inhabit are fundamentally conditioned by the world* – through two complementary approaches. Following the arguments made by behavioural economists<sup>21</sup> and experimental governance scholars,<sup>22</sup> persons charged with constructing environments that create greater health, wealth and happiness for their communities or public institutions (‘choice architects’) ought to regularly run experiments in a manner that:

<sup>17</sup> M Walzer ‘On Involuntary Association’ in A Gutmann (ed) *Freedom of Association* (1998) 64, 67. What he means is that most of the associations that make up our social world are involuntary associations. The emphasis on involuntariness in associational life is meant to bracket any conception of freedom which intimates that *any* impediment to free association is a denial of that which is most fundamentally human. Not choosing to leave an association is often what we truly cherish as freedom.

<sup>18</sup> S Woolman ‘Seek Justice Elsewhere: An Egalitarian Pluralist’s Reply to David Bilchitz on the Distinction Between Differentiation and Domination’ (2012) 28 *South African Journal on Human Rights* 273, accessed at <https://doi.org/10.1080/19962126.2012.11865047>.

<sup>19</sup> *New Nation Movement NPC and Others v President of the Republic of South Africa and Others* [2020] ZACC 11, 2020 (8) BCLR 950 (CC).

<sup>20</sup> S Woolman ‘Seek Justice Elsewhere: An Egalitarian Pluralist’s Reply to David Bilchitz on the Distinction Between Differentiation and Domination’ (2012) 28 *South African Journal on Human Rights* 273, accessed at <https://doi.org/10.1080/19962126.2012.11865047>.

<sup>21</sup> R Thaler & C Sunstein *Nudge* (2008); M Dorf & C Sabel ‘A Constitution of Democratic Experimentalism’ (1998) 98 *Columbia Law Review* 267.

<sup>22</sup> *A Sen Development as Freedom* (1999).

- diminishes undesirable biases;
- draws down on the (adaptive) preferences of a representative cohort of individuals;
- delivers policies that nudge people away from their undesirable defaults toward more optimal ends; and, ultimately,
- with the provision of a basket of basic public goods to all, facilitates various comprehensive visions of the good (as individuals understand ‘the good’).<sup>23</sup>

Of course, behavioural shifts through experiments may not be sufficient for all members of, and communities within, a polity to flourish. Development theorists (or advocates of the capabilities approach) would likely note that both state and society must be in a position to provide a basic basket of goods that enables human beings to develop those ‘capabilities’ necessary for each individual to achieve those ends that *each* person has reason to value.<sup>24</sup> That basket would need to contain both a certain level of *material* support (e.g., food, water, health, housing, education and a clean environment) and *immaterial* support (e.g., the rule of law, and rights to equality, dignity, expression, religion, association, assembly, vote and fair trials) that would enable individuals to pursue a comprehensive vision of the good (as each individual understands the good).

Here, then, is a first take on how experimentalism and flourishing (read together) ground both individual and political life. Ethical, economic, political and constitutional empiricism requires that we evaluate social norms and institutional arrangements against our practical experience instead of a priori norms or mere intuition.<sup>25</sup> In keeping with

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<sup>23</sup> A constitutional democracy, made up of millions of radically heterogeneous, naturally and socially determined individuals (densely populated ‘mes’ comprised of multiple ways of being in the world), constantly strives, through policy, legislation, common law, customary law and ultimately the provisions of its basic law, to determine what works best for most of its many constituents. Because our Constitution states some (and only some) of the norms that govern our lives at an extremely high level of generality, it remains for citizens and their representatives to create doctrines and institutions that serve those capaciously framed ends best. This book suggests that experiments in living that fall within the accepted parameters of shared constitutional norms are likely, over time, to produce practices that can be replicated by other members of the polity. The truly interesting feature of the theory of constitutionalism on display here is that these rolling best practices – bounded by a basic law order committed to flourishing and, thus, to the development and the expansion of our individual capabilities – do not merely serve the preordained ends of South Africa’s denizens. Our reflexive stance toward these rolling best practices will invariably cause us, over time, to alter the content of the fundamental norms that bind us.

<sup>24</sup> A Sen *Development as Freedom* (1999); A Sen *Inequality Re-examined* (1992); A Sen *The Idea of Justice* (2010).

<sup>25</sup> JS Mill *On Liberty* (1851); J Dewey *Reconstruction in Philosophy* (1921) (On the consequences of pragmatism for politics.) My account of experimentation is somewhat more diffuse. Instead of viewing experimentation as the product of individual reflection, I view it as a set of reciprocal social processes that creates the conditions for individuals, communities and the state to engage critically both the ends pursued and the means employed to pursue those ends. In *On Liberty*, Mill argued that the only way for individuals and groups within a given polity to come to know that in which the ‘good life’ consists, is for as many individuals and groups as is possible – given the limits of resources and the inevitable potential for conflict – to be given the space to engage in ‘experiments in living’. See E Anderson ‘John Stuart Mill and Experiments in Living’ (1991) 101 *Ethics* 4. For Mill, the optimal condition for fostering experimentalism was through a thorough-going commitment to the protection of individual liberty. Mill’s experimentalist model was premised on a direct, relatively unmediated vertical relationship between individual citizens and government. Given my recasting of freedom in terms of flourishing, and the recognition of the inevitable bottlenecks in social formations that block change, we can identify three obvious shortcomings in Mill’s model. First, while cognisant of the conformist pressures that customs are capable of exerting, Mill did not

that leitmotif, it follows that social norms and associational arrangements ought to be altered in light of the success or the failure of various *experiments in living* undertaken by individuals or groups or communities or institutions that inhabit any given state.<sup>26</sup> Experimentalism is made more coherent by a concomitant commitment to *reflexivity*. Operationally, reflexivity describes a system (from the most basic to the most complex) that regularly evaluates the record of past performance and adjusts itself accordingly to make better decisions [as bracketed by some normative framework] in the future. Reflexivity in politics takes the form of very general, centralised standard setting, wedded to localised experimentation. After the data on successful experiments are pooled and disseminated, all boats should rise with the recognition of and rolling implementation of best practices.<sup>27</sup> As a matter of principle, reflexivity demands that we be willing to examine and to put to the test, individually and collectively, our preferred ends and the means for achieving them. This dimension of experimentalism corresponds with the notion that, in a representative and participatory democracy, no ideas or policies should be regarded as above criticism or immune to change. At the same time, the commitment to flourishing means that in a (formally) inclusive democracy such as our own, one cannot speak of our constitutional

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fully appreciate the mutually reinforcing and restrictive roles that social norms, legal institutions and political power play in determining individual identity. Second, Mill failed to recognise the extent to which highly conditioned individual action, constrained by inflexible social norms and rigid legal arrangements, make significant shifts in value formation extremely difficult. Third, Mill overestimated the ability of individual reflection to yield optimal or novel results.

<sup>26</sup> M Dorf & C Sabel 'A Constitution of Democratic Experimentalism' (1998) 98 *Columbia Law Review* 267.

<sup>27</sup> The Constitutional Court warmed to the idea that an effective democracy is contingent upon the participation of a citizenry actively engaged in the process of law-making. As Justice Sachs writes in *Doctors for Life v The Speaker of the National Assembly*:

This constitutional matrix makes it clear that although regular elections and a multi-party system of democratic government are fundamental to our constitutional democracy, they are not exhaustive of it. Their constitutional objective is explicitly declared at a foundational level to be to ensure accountability, responsiveness and openness. The express articulation of this triad of principles would be redundant if it was simply to be subsumed into notions of electoral democracy. Clearly it is intended to add something fundamental to such notions. It should be emphasised that respect for these three inter-related notions in no way undermines the centrality to our democratic order of universal suffrage and majority rule, both of which were achieved in this country with immense sacrifice over generations. Representative democracy undoubtedly lies at the heart of our system of government, and needs resolutely to be defended ... Yet the Constitution envisages something more. True to the manner in which it itself was sired, the Constitution predicates and incorporates within its vision the existence of a permanently engaged citizenry alerted to and involved with all legislative programmes. The people have more than the right to vote in periodical elections, fundamental though that is. And more is guaranteed to them than the opportunity to object to legislation before and after it is passed, and to criticize it from the sidelines while it is being adopted. They are accorded the right on an ongoing basis and in a very direct manner, to be (and to feel themselves to be) involved in the actual processes of law-making. Elections are of necessity periodical. Accountability, responsiveness and openness, on the other hand, are by their very nature ubiquitous and timeless. They are constants of our democracy, to be ceaselessly asserted in relation to ongoing legislative and other activities of government. Thus, it would be a travesty of our Constitution to treat democracy as going into a deep sleep after elections, only to be kissed back to short spells of life every five years. Although in other countries nods in the direction of participatory democracy may serve as hallmarks of good government in a political sense, in our country active and ongoing public involvement is a requirement of constitutional government in a legal sense. It is not just a matter of legislative etiquette or good governmental manners. It is one of constitutional obligation.

2006 (6) SA 416 (CC), 2006 (12) BCLR 1399 (CC) at paras 228–232.

project without pre-commitments to a range of capabilities, entitlements and principles: universal suffrage, the absence of slavery or servitude, access to a panoply of basic goods and a commitment to the rule of law.<sup>28</sup>

Put somewhat differently, such a virtuous circle is not limited to fostering the agency of the individual. Individual agents should be understood both as ends in themselves and as the ‘basic building blocks’ of aggregate social development. The ‘greater freedom’ of individuals not only ‘enhances the ability of people to help themselves and ... to influence the world’, it is essential to the development of society as a whole.<sup>29</sup> For Amartya Sen, the link between individual capabilities and development is part of a virtuous circle. Enhancement of individual flourishing – by both immaterial and material means<sup>30</sup> – leads to greater social development, which, in turn, further enhances the possibilities for individuals to lead the kinds of lives we have reason to value.<sup>31</sup>

This virtuous circle would appear to be what the Constitutional Court in *Khosa* had in mind when it tied the wellbeing of the worst off to the wellbeing of the wealthy.<sup>32</sup> The enhancement of individual capabilities of the poorest members of our political community enhances the development of South Africa as a whole. Or put slightly differently, the greater the agency of the least well-off members of our society, the greater the agency of all the members of our society. This gloss on *Khosa* emphasises not the subjective sense of wellbeing that the well-off might experience by tying their wellbeing to that of the poor. Rather, it emphasises an increase in an objective measure of wellbeing (say, on an OECD *Better Life Index* that measures the quality of life) that flows from the enhancement of the agency of each individual member of our society.<sup>33</sup>

However, my intent here is not to sketch out the lineaments for a just and fair social order. This section – as well as the two sections that immediately follow – has a three-fold purpose. First, it’s important to note that no more than 70 out of 200 nations satisfy the *de minimis* criteria for being counted as democracies. Of these 70, some 50 have been deemed flawed. In many instances, they lack the embedded traditions and practices necessary to create inclusive institutions and they face significant impediments in their attempts to move from extractive regimes to more egalitarian pluralist systems. (As we shall see, South Africa falls near the bottom of this second cohort.) Second, politics which fail to deliver an appropriate basket of material and immaterial goods, along with the ability to engage in (both individual and collective) experiments in living that convert negative

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<sup>28</sup> S Woolman *The Selfless Constitution* (2013) 221.

<sup>29</sup> A Sen *Development as Freedom* (1999) 18.

<sup>30</sup> Perhaps this phrase would make more sense to readers if I simply said ‘political and economic’ means. However, something novel would be lost in translation or in the use of terms that have fairly well delineated connotations and denotations.

<sup>31</sup> *ibid.*

<sup>32</sup> *Khosa v Minister of Social Development; Mahlaule v Minister of Social Development* 2004 (6) SA 505 (CC), 2004 (6) BCLR 569 (CC). See also S Woolman ‘The Widening Gyre of Dignity’ in S Woolman & M Bishop (eds) *Constitutional Conversations* (2008) 149; S Woolman ‘Dignity’ in S Woolman & M Bishop (eds) *Constitutional Law of South Africa* (2nd Edition, OS, March 2006) Chapter 36 (Contentends that the Court’s reading of dignity need not end with self-actualization, but clearly embraces a commitment to democratic solidarity.)

<sup>33</sup> S Woolman *The Selfless Constitution* (2013) at 397.

defaults to positive heuristics,<sup>34</sup> are unlikely to meet pressing domestic challenges. Third, if an unequal, poor and perpetually extractive political economy such as South Africa cannot meet its most basic domestic tests, then it will, in all likelihood, fail to mitigate the exogenous shocks (aka wicked problems) that could bring down the entire state. That's not a prediction of imminent demise. Poor, extractive politics can bumble along for quite some time – decades and centuries beyond their sell-by date. It's only to say that most of South Africa's indicators point down and not up – and that its mismanagement of COVID-19 bodes ill with respect to its ability to solve the other wicked problems with which this work is concerned.

*Problems of collective action and the inability of the state to create those public goods necessary to enable individuals and communities to realise a variety of comprehensive visions of the good*<sup>35</sup>

What are problems of collective action? Political economists have long recognised that large, intermediate and small groups will often fail to organise in a manner necessary to deliver important public goods, because of:

<sup>34</sup> R Thaler & C Sunstein *Nudge: Improving Decisions about Health, Wealth and Happiness* (2008). For Thaler and Sunstein, choice architects employ a number of techniques to ensure that individuals and groups flourish. They create spaces that feature incentives to make optimal choices. The spaces must lay out all pertinent information for optimal decision-making. The architects must first understand the defaults or the heuristics that lead to repetitive, negative behaviour (laziness) so that the default or the heuristic in a system can be reset toward the outcome most likely to enhance the individual's and the group's welfare. G Gigerenzer 'Moral Intuition = Fast and Frugal Heuristics' in W Sinnott-Armstrong (ed) *Moral Psychology, Volume II – The Cognitive Science of Morality: Intuition and Diversity* (2008).

<sup>35</sup> My account recognises the sources of the individual as radically heterogeneous. The individual and its selves or narratives are a function of linguistic, religious, social, class, racial, ethnic, gender, national and political groupings which may overlap, but which are never identical, and which often conflict with one another. Communitarians (a) tend to privilege the political community over other communities and underplay existing and historical conflicts between the various communities that source the self, or (b) entirely elide the difference between the polity and other communities that make up a society. For example, George Fletcher writes:

In a patriotic society, where all individuals share a common past and purpose, each can identify with others and find in them an equal partner in a common cause. The rooting of the self in a culture of loyalty enables individuals to grasp the humanity of their fellow citizens and to treat them as bearers of equal rights.

*Loyalty* (1993) 21 (Emphasis added)

Fletcher's prose is a perfect example of what might be called the *communitarian shuffle*: the easy move back and forth between discussions about society and polity that obscures the fact that the two are not co-extensive – that politics contain multiple societies, sub-publics and cultures, and that cultures, sub-publics and societies are often rooted in a variety of different states. The difference is important. The communitarian privileging of the state over other communities within the state – or in some cases conflating the state and those communities – has significant repercussions for individual and group flourishing, as well as the construction of the self. Once shared pasts, united purposes and common causes are assumed, the state is further free to assume that important differences between its citizens and the smaller communities (or larger transnational communities) of which they are a part do not exist. Once pluralism is no longer a concern, there is no reason for individual and group flourishing to be. The state is then truly free to impose a more homogenous and standardised way of life. David Bilchitz makes a similar error in an article that extols the putative benefits of reading the South African Constitution as reflective of and committed to a radically egalitarian polity. D Bilchitz 'Should Religious Associations be Allowed to Discriminate?' (2011) 27 *South African Journal on Human Rights* 219.

- significant transaction costs;
- asymmetries in power and money;
- over-valorisation of individual contributions;
- limited appreciation for the benefits that flow from successful collective endeavours within and without the group;
- a heterogeneity of interests that undermines solidarity;
- cognitive biases;
- attributives bias; or
- an absence of enlightened self-interest.<sup>36</sup>

Mancur Olson, in *The Logic of Collective Action: Public Goods and the Theory of Groups*, begins his explanation for these failures as follows:

[I]t is not true ... that groups will act in their self-interest follows logically from the premise of rational and self-interested behaviour. Indeed, unless the number of individuals in a group is quite small, or unless there is coercion or some other special device to make individuals act in their common interest, *rational ... individuals will not act to achieve their common or group interests.*<sup>37</sup>

Olson's elegant argument deserves careful expatiation. Let us begin with this proposition:

Just as those who belong to an organization or a group can be presumed to have a common interest, so they obviously also have purely individual interests, different from others in the organization or group. All of the members of a labour union, for example, have a common interest in higher wages, but at the same time each worker has a unique interest in his personal income, which depends not only on the rate of wages but also on the length of the time that he works.<sup>38</sup>

Some union members may wish to spend their time with their children, others earning overtime, and yet others watching television at a bar. Olson's first claim is that belonging to a group, association or some other organisation does not ensure homogeneity of interest: union members, for example, may have quite heterogeneous interests.

Olson's next move is critical for understanding the difference in success between large groups and small groups with ostensibly common interests. It follows from the above that 'a lobbying group, or a labour union or any other organisation, working in the interest of a large group of firms or workers in some industry, would get limited assistance from the rational self-interested individuals in that industry'.<sup>39</sup> Why? Again, it's not *rational* for the individual worker or individual producer to sacrifice his or her time or money for the collective effort required to produce the collective good.

No modern state, irrespective of form or ideological inclination, has been able to support itself through voluntary dues or contributions. Coercion, in the form of taxes or another means of extracting wealth (labour), is required. 'The reason the state cannot survive on voluntary ... payments', Olson explains, 'is that ... the public goods must be available to everyone if they are available to anyone'. The most basic public goods provided

<sup>36</sup> S Woolman, E Fishman & M Fisher 'Evidence of Patent Thickets in Complex Biopharmaceutical Technologies' (2013) 53 *IDEA: The International Journal of Intellectual Property* 1.

<sup>37</sup> M Olson *The Logic of Collective Action: Public Goods and the Theory of Groups* (1965) (Olson's emphasis) 3–4.

<sup>38</sup> *ibid.* at 8.

<sup>39</sup> *ibid.* at 11.

by the government – defence or systems of law and order – are of such a nature that they must flow to ‘everyone in the nation’.<sup>40</sup>

Olson attaches a significant caveat with respect to the ability of small groups to readily produce a limited supply of public goods:

Certain small groups can provide themselves with *a* collective good without relying on coercion or any positive inducements apart from the collective good itself. This is because in some small groups each of the members ... will find that his personal gain from having the collective good exceeds the total cost of providing some amount of that collective good; there are members who would be better off if the collective good were provided, even if they had to pay the entire cost of providing it themselves.<sup>41</sup>

Notice the word ‘a’ in front of Olson’s first use of ‘collective good’. While small groups might provide a basic education or even food (without coercion), they are hardly in a position within a large, heterogenous polity:

- to provide an intricate system of roads and ports to connect us to other citizens and the broader world;
- to deliver a military designed to prevent foreign aggression and a police force to maintain the peace;
- to ensure that courts defend the rule of law and fundamental rights, as well as protect citizens from theft, breach of contract, fraud and discrimination by the state or other citizens; and
- to afford those social safety nets necessary to catch all citizens in need.

Moreover, many a discrete and insular minority will struggle, even in an inclusive modern democracy, to secure a fair and the efficient distribution of these essential goods. The state must protect such out-groups from tyrannies of majorities – both transient and permanent in nature.

Olson’s taxonomy of groups according to their behaviour bears a remarkable resemblance to what we have experienced in post-apartheid South Africa. Because apartheid was immensely successful on its own terms, many small groups enjoy a degree of cohesion that allows for production of a few ‘public’ goods ‘without [a] group[']s’ agreement or organisation. However, that does not begin to account for all the goods and services that even the most cohesive community enjoys and that are not of their own making. Intermediate groups – say cartels – are still in a position to reach at least tacit understandings for effective coordination. Larger groups and their members will have to be bound by some formal, enforceable agreement to ensure the production of a collective good. To secure this formal agreement, the larger group will have to overcome the numerous barriers identified at the outset of this section: from significant transaction costs to an array of cognitive biases to asymmetries in power to an over-valorisation of specific individual contributions.

Having laid out Olson’s basic argument, we should keep in mind three essential conclusions. First, large organisations possess common tendencies whether we describe them as voluntary, market-driven or governmental. Second, once we have broken down conceptual barriers – for example, between unions, large civil society organisations (CSOs), such as a university or the state – we come to understand that union members,

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<sup>40</sup> *ibid.* at 13–14.

<sup>41</sup> *ibid.* at 34. (Emphasis added)

taxpayers, academics and students will often not sacrifice their time or money unless they are compelled to do so. Third, without compulsion to participate in the affairs of state, most people opt out. As C Wright Mills noted long ago, ‘indifference’ is the hallmark of most citizens in a democracy: ‘[T]hey are not radical, not liberal, not conservative, not reactionary: they are inactionary; they are out of it.’<sup>42</sup> This last observation is unsurprising given the constraints on cooperation singled out at the start of this section. Initial political engagement is swiftly overtaken by the demands of everyday life – family, work, sleep (do it again). After several waves of post-World War II democratisation, Tony Judt seems perfectly justified in concluding that: ‘[Democracies] corrode because most people don’t care very much about them ... The difficulty of sustaining voluntary interest in the business of choosing the people who will rule over you is well attested.’<sup>43</sup> Such disinterest constitutes yet another constraint on change.

In 2007, Tshepo Madlingozi explained, in part, why the solidarity that held together the anti-apartheid movement quickly evaporated after 1994.<sup>44</sup> The UDF provided the organisational structure for banned political parties, trade unions, churches, CSOs, NGOs, as well as other groups of every shape, size and colour. After the official demise of apartheid, the various groups that had cooperated with one another through the UDF no longer shared the same singular organising principle. ‘Mission accomplished’, each group went on to pursue narrower, more immediate interests.

Trade unions have shown that their interests are limited largely to the aggrandisement of their members. Political parties – from the ANC on down – have all engaged in rent-seeking behaviour and have shown insufficient interest (or capacity) in actual governance.<sup>45</sup> Civil society – rendered largely invisible under apartheid – remains fractured and small. Indeed, it remains so impotent that it could not mount a significant challenge to the clientelism, cronyism and corruption of the Mbeki–Zuma years, and has no answers to the do-nothingness of Ramaphosa’s three years in office. (At the apogee of his political fortunes, Ramaphosa cleverly ushered Zuma out of party leadership and direct political power.<sup>46</sup> But he has not altered the underlying fundamentals of his beleaguered party.<sup>47</sup>) Twenty-six years after formal liberation, South Africa lacks the inclusive political and economic institutions necessary to forestall either social implosion or far more autocratic, extractive rule. With 30% of the population eking out an existence at the \$1.90/day food poverty line, and 50% at the upper bound of \$5/day poverty line, the government in June 2020 turned to lenders of last resort because few other potential creditors would risk further loans over which the possibility of default looms large.

How will the large radically heterogeneous group of individuals that constitute ‘South Africa’ overcome the differences in interest that prevent us from arriving at solutions to the almost insuperable problems that face us? A broader social/political movement is required. However, creating such a movement during a long-term pandemic and a financial crisis that causes people to turn inward (for survival) and away (for reasons that have plagued this space for centuries) will not be easy. Even when such negative constraints are relaxed, there’s no guarantee that more progressive movements within a more inclusive democratic polity will arrive at the correct responses.<sup>48</sup>

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<sup>48</sup> The first theorist to question the straightforward nature of democratic decision-making paid for his theories with his life. Condorcet offered two primary theses that undercut the then ballyhooed commitment to the democratic rule in revolutionary France. M Condorcet *Essay on the Application of Analysis to the Probability of Majority Decisions* (1785). According to *his jury theorem*, if a jury member has a less than perfect chance

One of South Africa's most successful social movements – The Treatment Action Campaign – succeeded (in concert with others) in pressing the state to create a national anti-retroviral therapy (ART) programme.<sup>49</sup> Its focus on and success on a single specific issue did not translate into a better public healthcare system or a broader political movement that would first, protect the most vulnerable in our society, and second, ensure that everyone possessed that basket of material and immaterial goods that would enable each individual to pursue a comprehensive vision of the good (as he or she understands the good.)<sup>50</sup>

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of reaching the correct decision about the guilt of an accused, then (a) a majority of jurors is more likely to be correct than an individual juror and (b) the larger the group of members on a jury or decision-making body, the more likely it is that the larger group will reach the correct decision. According to *his paradox*, voter preferences lack transitivity. A pool of voters may prefer policy A to policy B to policy C, policy B to policy C to policy A, and policy B to policy C to policy A. You can thereby generate majorities that are intransitive. That intransitivity introduces a degree of irrationality into majority decision-making that undercuts the enlightenment commitments of both the French Revolution and the American Revolution to 'pure reason'. Other social choice theorists followed Condorcet's lead in the 20th century. KJ Arrow's impossibility theorem demonstrated – under certain conditions – that when individual voters are offered multiple alternatives, there's no method for ensuring coherent sets of collective preferences. KJ Arrow 'A Difficulty in the Concept of Social Welfare' (1950) *Journal of Political Economy*, 328. Put slightly differently, the impossibility theorem explains why majority outcomes, in instances where multiple options as opposed to binary options exist, tend to be cyclic rather than transitive. Again, representative bodies are subject to an array of factors that creates distortions in decision-making processes and works against more optimal outcomes. Amartya Sen's possibility theorem loosens Arrow's individualist constraints. Even so, Sen shows that the ordinal preferences of citizens will not necessarily yield a similarly coherent ordinal list of rights or preferences for the polity as a whole. For example, if three citizens have access to the same amount of material wealth, they will not only likely spend that amount differently; they might – given their different preferences – want rights or laws to protect very different ordinal sets of basic goods. Assume the three citizens have R200 000. Citizen A has a debilitating illness – and all things being equal must spend most of the income on medical care (at the cost of pursuing other ends.) Citizen A is likely to want the political realm to enhance access to healthcare so that he or she might pursue a specific comprehensive vision of the good. Citizen B has no physical limitations and has had access to a first-class education. Citizen B might wish to risk the income on ideas that might – in an open, social-democratic society – enable the creation of a new business that benefits the broader community and allows a profit on his or her intellectual contributions. Citizen C might have four children and no formal education. Citizen C might want welfare rights for children and free public education through university studies. In heterogeneous communities (and virtually all societies), one would expect many such differences amongst its citizens. Sen thus remains rather agnostic about how rights and preferences ought to be ordered in any given polity. A Sen & E Maskin *The Arrow Impossibility Theorem* (2014).

<sup>49</sup> C Sprague & S Woolman 'Moral Luck: Exploiting South Africa's Policy Environment to Produce a Sustainable National ART Programme' (2006) *South African Journal on Human Rights* 337; S Woolman & C Sprague 'Aspen Pharmacare: Providing Affordable Generic Pharmaceuticals for the Treatment of HIV/AIDS and Tuberculosis' in R Hammann, S Woolman & C Sprague (eds) *The Business of Sustainable Development: Human Rights, Public-Private Partnerships & New Business Models* (1st Edition, 2009) Chapter 13.

<sup>50</sup> That's not to say that the TAC did not leverage its success with respect to the treatment of persons living with HIV into other domains such as education, sanitation and access to information and reforming patent laws and basic conditions of work. Its leaders and members did. However, additional successful interventions did not remedy higher order political problems or create a new political party that might have strengthened rather than hollowed out the democratic institutions created by our aspirational constitution. S Friedman & S Mottiar 'A Rewarding Engagement? The Treatment Action Campaign and the Politics of HIV/AIDS' 33(4) *Politics & Society* 511, accessed at <https://doi.org/10.1177/0032329205280928>:

*The failure to move from extractive political and economic institutions to inclusive political and economic institutions*

Many readers would have thought – at the time – that 27 April 1994 marked a ‘critical juncture’ in South Africa’s history.<sup>51</sup> At the time of that critical juncture, most denizens of South Africa assumed that we were on a positive trajectory. However, as Acemoglu and Robinson note:

There should be no presumption that any critical juncture will lead to a successful political revolution or to change for the better. History is full of examples of revolutions and radical movements replacing one tyranny with another, in a pattern that the German sociologist Robert Michels dubbed the iron law of oligarchy, a particularly pernicious form of the vicious circle.<sup>52</sup>

The power of this approach flows from its ability to trace the rise and the fall of nations without any sense of necessity. Some critical junctures may seem so insignificant as to hardly warrant the appellation.

Following a critical juncture (or a long succession of such moments over time), nations and their inhabitants may prosper after moving from extractive institutions to inclusive institutions. But there’s no guarantee that they will remain inclusive thereafter. Indeed, the historical record, and a quick survey of the current global landscape, demonstrates how inclusive institutions can be captured by elites and turned into extractive arrangements, as well as how, on occasion, popular struggles can force extractive institutions to become more inclusive. How inclusive? That too is a contingent matter. As the quote from Hannah Arendt at the outset of this book reflects, there’s simply no telling at the time of writing what the ultimate consequences of a ‘critical juncture’ of significant events will be. That Acemoglu and Robinson’s account always requires a strong, centralised state to deliver a basic basket of material and immaterial goods necessary to enable each individual to pursue a life worth valuing, as each individual understands a comprehensive vision of the good, supplies sufficient connective tissue to link their framework with accounts drawn from, Dennett, Sen, Thaler, Sunstein, Dorf, Nussbaum, Dufflo, Banerjee, Olsen and Madlingozi, above and below.<sup>53</sup>

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The current spread of democracy has not enabled the poor to use rights to win equity, raising questions about whether the poor and weak can use liberal democratic freedoms to address inequality. An oft-cited model of success, however, is the Treatment Action Campaign (TAC)’s campaign to press the South African government into distributing anti-retroviral medication to people living with HIV/AIDS. This article finds that TAC’s strategy of using the rights and rules of constitutional democracy to win gains may offer an exemplar for forms of collective action which can win substantive equality, but that the model remains of *limited application*. (Emphasis added)

<sup>51</sup> D Acemoglu & J Robinson *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (2012). The locution ‘critical juncture’ along with much of the analysis that follows here relies on their edifying historical edifice. Their later strictly economic analysis takes a somewhat different turn (as well it should). D Acemoglu & J Robinson *The Narrow Corridor: States, Societies, and the Fate of Liberty* (2019); D Acemoglu and P Restrepo ‘Automation and New Tasks: How Technology Displaces and Reinstates Labor’ (2019) 33 (2) *Journal of Economic Perspectives* 3; D Acemoglu ‘The Post-Covid State’ *Project Syndicate* (5 June 2020), accessed at [https://www.project-syndicate.org/onpoint/four-possible-trajectories-after-covid19-daron-acemoglu-2020-06?utm\\_source=Project%20Syndicate%20Newsletter&utm\\_](https://www.project-syndicate.org/onpoint/four-possible-trajectories-after-covid19-daron-acemoglu-2020-06?utm_source=Project%20Syndicate%20Newsletter&utm_).

<sup>52</sup> D Acemoglu & J Robinson *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (2012) 366.

<sup>53</sup> ‘The Peace of Westphalia’ *Wikipedia* (November 2020), accessed at [https://en.wikipedia.org/wiki/Peace\\_of\\_Westphalia](https://en.wikipedia.org/wiki/Peace_of_Westphalia):

However, while it appears that post-apartheid South Africa has followed Michels' iron law of oligarchy<sup>54</sup> over the past 26 years of democratic rule, whether it's too late to turn things around must elicit my favourite response: *I don't know*. It's fair to say that the country's more inclusive political and economic institutions have enhanced the wellbeing of some of the 87% of South Africans disenfranchised, dispossessed, degraded and dehumanised under colonial and apartheid rule. At the same time, had those present in the voting queues on 27 April 1994 been given the ability to see what would take place over the next quarter century, they would be highly unlikely to deem the events subsequent to that 'critical juncture' a triumph.<sup>55</sup> (South Africa's persistent dual and iniquitous economies continue to leave over 28% of population (16 424 661 people) living (a barely subsistence existence) at or below the extreme poverty line of \$1.90/day.<sup>56</sup>)

As the longer historical account adumbrated in Chapter IV suggests, nothing about the slow pace of inclusion over the last 26 years has been inevitable, nor is the consolidation of power within the hands of the new elites necessarily irreversible. The question that we should continue to ask ourselves is whether the decisions that we take move us toward

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The Peace of Westphalia is the collective name for two peace treaties signed in October 1648 ... They ended the Thirty Years' war ... closing a calamitous period of European history that killed approximately eight million people. Scholars of international relations have identified the Peace of Westphalia as the origin of principles crucial to modern international relations, including the inviolability of borders and non-interference in the domestic affairs of sovereign states. This system became known as Westphalian Sovereignty.

<sup>54</sup> M Slattery *Key Ideas in Sociology* (2003) 52. Slattery highlights Michel's argument that oligarchy – the rule of the few – is inevitable, and that '[e]ven in the most revolutionary of organisations ... however radical their aims and ambitions, however democratic they may seem to be, ultimately these organisations will be redirected to serving the needs and ambitions of those at the top.' Large-scale organisations – and mass democracies – are fertile grounds for oligarchical behaviour. While individuals are able to make their voices heard through organisations, mass organisations also locate decision-making and power in the hands of the few. P Tolbert 'Robert Michels and The Iron Law of Oligarchy' (2010) *Cornell University ILR Working Papers*, accessed at <http://digitalcommons.ilr.cornell.edu/articles/397/>. Tolbert reflects on Michel's characterisation of the 'typical evolutionary processes in the governance of political organizations' – and how these processes shape organisational goals, particularly the goals of social movements. On South African oligarchic behaviour, see J Maree 'COSATU, Oligarchy and The Consolidation of Democracy In an African Context' in S Buhlungu & M Tshoaedi (eds) *COSATU's Contested Legacy: South African Trade Unions in the Second Decade of Democracy* (2013) 56. Despite COSATU's role in supporting the transition to a democratic South Africa, it is also identified as an example of an oligarchic movement – with this particularly being evident across national structures. On cartel behaviour in South Africa, see L Mncube & S Grimbeek 'A History of Collusion: The Persistence of Cartels in South Africa' in F Jenny & Y Katsoulacos (eds) *Competition Law Enforcement in the BRICS and in Developing Countries* (2016) 337. Consistent with Michel's arguments, Mncube and Grimbeek trace the efforts of post-apartheid South Africa to liberalise former 'price regulated markets' – with 'liberalisation ... inadvertently, by increasing competition in formerly protected markets, ... increas[ing] the incentives for firms to participate in cartels'.

<sup>55</sup> F Cachalia 'Democratic Constitutionalism in the Time of the Postcolony: Beyond Triumph and Betrayal' (2018) 34 *South African Journal on Human Rights* 375. Cachalia offers a balanced account of South Africa's history, before and after this 'critical juncture', and has sufficient faith in his country's people to argue, persuasively, that the process of creating greater political and economic inclusion within South Africa remains within the hands of the people and their elected representatives.

<sup>56</sup> 'Extreme Poverty in South Africa' *World Poverty Clock: by World Poverty Lab* (1 July 2020), accessed at <https://worldpoverty.io/?utm>.

more inclusive institutions or perpetuate the cycle of extreme extraction (originally created under colonial and apartheid rule).<sup>57</sup> As Acemoglu and Robinson crisply put this point:

[P]oor countries are poor because those who have power make choices that create poverty. They get it wrong not by mistake or ignorance but on purpose.<sup>58</sup>

While it's fashionable to decry the evils of neoliberalism or globalisation, a sufficiently large number of success stories over the post-World War II and post-fall of the Berlin Wall exist to call into question this reflexive finger-pointing. Most full democracies – all 20 of them – possess liberal normative structures and engage in global trade. The question is always: who benefits?

The two Koreas, directly after World War II, offer a perfect case in point. Any differences in outcomes cannot be attributed to culture, language, geography or history. The leadership of both North Korea and South Korea at the time can only be described as authoritarian.<sup>59</sup> So what differences have left the former a cruelly impoverished, aspirant nuclear power and the latter one of the world's wealthiest democracies? In 1948, South Korea's elected leader Syngman Rhee served the United States' interests in 'the containment' of communism. However, his authoritarian rule still allowed for the ownership of private property and the operation of markets. His successor, General Park Chung-Hee, 'threw the weight of the state behind rapid economic growth, channelling credit and subsidies to firms that were successful.'<sup>60</sup> While South Korea flirted with democracy now and again, only in 1987 did democratic institutions become fully embedded in the polity – and no elected president has served more than a single five-year term in office.<sup>61</sup> While several chaebols – family-run syndicates – dominate the economy,<sup>62</sup> 70 years of investment in education, basic infrastructure and other institutions from which all might benefit has enabled individuals to pursue their own independent goals. Although General Park's coup and subsequent dictatorship could hardly be said to foreshadow the contemporary landscape, his regime's willingness to spread the benefits of South Korea's increasing wealth amongst most of its citizens led to the country's current dynamism and its recognition as one of Asia's four tigers some two decades ago.<sup>63</sup>

<sup>57</sup> Without saying more here, it's not as if different indigenous kingdoms and polities were economically and politically inclusive prior to the depredations of colonial and apartheid rule. However, South Africa's path of development might have been different had English colonial rule not created the Land Act of 1913 in order to dispossess 87% of South Africans of their land and create huge pools of black, coloured and Indian surplus labour to work white-owned mines, farms and industries. The apartheid state created large concentration camps so as to further ensure an endless supply of forced labourers for various forms of plantations with such extractive pieces of legislation as The Abolition of Passes, The Coordination of Documents Act and The Promotion of Bantu Self-Government Act.

<sup>58</sup> Acemoglu & Robinson *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (2012) at 68.

<sup>59</sup> W Song & J Wright 'The North Korean Autocracy in Comparative Perspective'. (2018) 2 *Journal of East Asian Studies* 157, accessed at <https://www.cambridge.org/core/journals/journal-of-east-asian-studies/article/north-korean-autocracy-in-comparative-perspective/568E14993FF9F4DDDF008E90303EC642>.

<sup>60</sup> Acemoglu & Robinson (2012) at 70–73.

<sup>61</sup> G Brazinsky *Nation Building in South Korea: Koreans, Americans, and the Making of a Democracy* (2009). See also L Diamond, K Byung-Kook & K Pyong-guk (eds) *Consolidating Democracy in South Korea* (2000).

<sup>62</sup> F Sial & J Doucette 'Inclusive Partners? Internationalising South Korea's Chaebol through Corporate Social Responsibility-Linked Development Cooperation' (2020) *Third World Quarterly* 1 (2020), accessed at <https://www.tandfonline.com/doi/full/10.1080/01436597.2020.1782185>

<sup>63</sup> E Kim *The Four Asian Tigers: Economic Development and the Global Political Economy* (1998).

North Korea took a different path. As a satellite state of the Soviet Union, the nation eliminated all forms of economic and political freedom. Any benefits of the centrally planned economy flowed to a small elite that served Kim Il-Sung and Kim Jong-Il and, now, Kim Jong-un and his sister, Kim Yo-jong.<sup>64</sup>

As matters stand, North Korea's per capita GDP ranks 178th globally.<sup>65</sup> South Korea's per capita GDP punches in at 27th, while GDP, nominally and in terms of purchasing power parity, holds a heady 12th position in the world.<sup>66</sup>

This initial comparison is not meant to contrast polities that employ classically communist and centrally planned economies with open, democratic, liberal market-based political economies. Since we can hold as relatively constant history, language, culture and geography, this Korean contrast in outcomes merely illustrates what happens when power remains concentrated in the hands of the few as opposed to what occurs when control over and access to political and economic institutions – and the goods that they distribute – expands to ever larger portions of a society.

Acemoglu and Robinson open their own work with a similar 'just so' story about the relative status of Nogales, Sonora, Mexico and Nogales, Arizona, United States. Up until the Gasden purchase of 1853,<sup>67</sup> these two cities – now split by a fence – were one. The geography, climate, culture and ethnicity remain largely the same today. While the depredations of the Trump Administration may have visited some misfortune on Nogales, Arizona, for now Acemoglu and Robinson's 2012 picture remains reliable:

Life south of the fence, just a few feet away, is rather different. While the residents of Nogales, Sonora, live in a relatively prosperous part of Mexico, the income of the average household there is about one-third that in Nogales, Arizona. Most adults in Nogales, Sonora, do not have a high school degree, and many teenagers are not in school. Mothers have to worry about high rates of infant mortality. Poor public health conditions mean it's no surprise that the residents of Nogales, Sonora, do not live as long as their northern neighbors. They also don't have access to many public amenities. Roads are in bad condition south of the fence. Law and order is in worse condition. Crime is high, and opening a business is a risky activity. Not only do you risk robbery, but getting all the permissions and greasing all the palms just to open is no easy endeavor. Residents of Nogales, Sonora, live with politicians' corruption and ineptitude every day ... [D]emocracy is a very recent experience for them. Until the political reforms of 2000, Nogales, Sonora, just like the rest of Mexico, was under the corrupt control of the Institutional Revolutionary Party, or Partido Revolucionario Institucional.<sup>68</sup>

Read in a compressed fashion, the tales of the two Koreas and the two Nogales might seem like overly simplistic defences of left-centrist liberal democracy – tales that would, quite frankly, be certain to alienate part of the South African audience to whom this work is addressed. But the authors do not follow this compare and contrast of the two Nogales

<sup>64</sup> S Lee 'Why Did Kim Jong-un's Sister Become the Face of North Korea?' *The New York Times* (26 June 2020), accessed at <https://www.nytimes.com/2020/06/26/opinion/kim-yo-jong-north-korea.html>.

<sup>65</sup> 'North Korea's GDP' *Trading Economics* (July 2020), accessed at <https://tradingeconomics.com/north-korea/gdp-annual-growth-rate>.

<sup>66</sup> 'South Korea's GDP' *Trading Economics* (July 2020), accessed at <https://tradingeconomics.com/south-korea/gdp>.

<sup>67</sup> For more on the effects of the Gasden Purchase, see R Adams *Continental Divides: Remapping the Cultures of North America* (2010).

<sup>68</sup> D Acemoglu & J Robinson *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (2012) 8.

with a pat account of the kinds of institutions that make the northern side habitable (if not especially attractive, given that \$30 000 per annum per family reflects the low end of the working-class spectrum) and the south side a rather dangerous, live by the skin of your teeth affair (that consciously ignores the narcocracy that has engulfed north-western Mexico for some time.<sup>69</sup>)

Instead, Acemoglu and Robinson take us back to the brutal Spanish colonial conquest of virtually all of Central and South America in the 16th century.<sup>70</sup> Having found the silver and gold deposits that they had sought, the Spanish approached each subjugation of a South American kingdom in virtually the same way. Armed with guns and astride their horses, the conquistadors managed to capture the king. After torturing the king in order to extract as much gold and silver as could be rung from royal stores and members of the elites, they then divided up the kingdom's most valuable asset – the indigenous population that had previously served the king and his aristocracy. Each settler (initially a conquistador) was granted an *encomienda*<sup>71</sup> by the Spain Crown: the right to settle in a town and its surrounds and to turn all of its inhabitants into slaves or serfs who could be exploited in order to extract mineral wealth or to till the soil to feed the Spanish ruling class.

This extremely oppressive and extractive institution was hardly novel. It had been employed by the Crown to recognise individual and collective success in reclaiming towns and cities on the Iberian Peninsula from long-standing Moorish rule. (It makes the Spanish Inquisition look like 'business as usual': in return for an *encomienda*, the conquistador-settler had an obligation to convert indigenous people to Catholicism.) Moreover, the new cruel colonial rulers often adapted similar institutional arrangements previously in place in South America. The Incan Empires had employed a system of forced labour – *the mita* – to run plantations that would feed the aristocracy and the army, who, in return, provided protection and used their stores of grain to ensure that the general population would not starve during famines.<sup>72</sup>

But much like the Incan and Aztec Empires that rose and fell over the course of the prior three centuries in Central and South America, the Spanish Empire would rise and fall over the next five centuries for broadly similar reasons.<sup>73</sup> Each of these empires relied

<sup>69</sup> A Cedillo 'Killing Two Condors with One Stone: The War on Drugs, Counterinsurgency, and the State of Siege in Northwestern Mexico' *Latin American, Caribbean and Iberian Studies Program (LACIS)* (1 November 2018), accessed at <https://lacis.wisc.edu/2018/11/01/killing-two-condors-with-one-stone-the-war-on-drugs-counterinsurgency-and-the-state-of-siege-in-northwestern-mexico/>; Congressional Research Service *Mexico: Organized Crime and Drug Trafficking Organizations* (20 December 2019), accessed at <https://fas.org/sgp/crs/row/R41576.pdf>.

<sup>70</sup> D Acemoglu & J Robinson *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (2012) 11–19, 335–364.

<sup>71</sup> L Simpson *The Encomienda in New Spain: Forced Native Labor in the Spanish Colonies, 1492-1550* (1929).

<sup>72</sup> T Kulmar 'About the Comparison of the State Authority and Social Organization by Incas and Aztecs' (2010) 45 *Folklore: Electronic Journal of Folklore* 137:

The Inca state in Peru was politically a highly centralized empire with strong central government ... [T]he government's intervention in social life was prevalent, village communities were put in the service of the government, horizontal mobility was regulated and vertical mobility was all but non-existent. It represented a so-called early totalitarian state.

<sup>73</sup> C Álvarez-Nogal & L Prados De La Escosura 'The Decline of Spain (1500–1850): Conjectural Estimates' (2007) 11 *European Review of Economic History* 319.

almost entirely on a non-inclusive and extractive set of political and economic institutions. Emperors ruled with (almost) absolute authority. Beneath them lay an aristocracy, and right below them the rulers of the *encomienda*. The Spanish Empire, with its holdings in South America, North America, small portions of Asia and tiny outposts in Africa, made it the first empire upon which the sun never set. Of course, this extractive behemoth also required a large number of worldwide sea-faring vessels and owners, a network of domestic and global traders and a class of artisans at home (and away) who could turn raw commodities into more substantial items for consumption by elites. Naturally, an army ensured the quiescence of the realm's inhabitants.

Although a rupture occurred as a result of Napoleon's invasion, along with an extremely brief flirtation with a Constitution that enshrined the Rights of Man, 'order' was eventually restored. The Spanish Monarchy actually lasted up through the end of Franco's dictatorship in 1976. The problem with such non-inclusive, repressive and extractive regimes as the Spanish Empire and Monarchy is that they create little incentive for change at the top or at the bottom. All wealth flows upwards. Where conflicts occurred, they generally took place between elites competing for larger slices of the pie. The late arrival of inclusive democratic and economic institutions in Spain provides a partial explanation for the country's extremely poor economic response to the financial crisis of 2008 and its equally poor public health and economic response to the COVID-19 pandemic currently underway.<sup>74</sup>

However, Spain's decline in the early 19th century,<sup>75</sup> and its loss of control over colonies such as Mexico, also offers insight into the divergent developmental paths of the two *Nogales*. After securing its independence from the crown, Mexico entered a period of instability from which it only began to emerge two centuries later. Presidents often lasted mere weeks, occasionally a year, rarely more, over the first half century of independence. During this period, the centralised authority necessary for the coordination and production of Olson-like 'public goods' broke down. Without a national government powerful and organised enough to raise taxes and provide for the administration of necessary public goods, one might ask: 'What remained?' The *encomienda*. Much of Mexico was run in the same extractive manner that had been put in place under Spanish rule. Even after a single party – the PRI – came to power in the early 20th century, it retained the absolutist and extractive institutional arrangements that existed for the next 100 years: a new, more formalised layer of extraction was simply added to what was inherited.<sup>76</sup> Even the demise of the PRI has failed to kill off Mexico's extractive political and economic institutions.<sup>77</sup>

<sup>74</sup> P Goodman 'Spain's Long Economic Nightmare is Finally Over: After Nearly a Decade of Economic Crisis, Spain's Economy is Finally Growing, Underscoring Hopes that the Eurozone is a Healthier Place' *The New York Times* (28 July 2017), accessed at <https://www.nytimes.com/2017/07/28/business/spain-europe-economy-recovery-unemployment.html>.

<sup>75</sup> C Álvarez-Nogal & L Prados De La Escosura 'The Decline of Spain (1500–1850): Conjectural Estimates' (2007) 11 *European Review of Economic History* 319.

<sup>76</sup> B Ames 'Bases of Support for Mexico's Dominant Party' (1970) 64 *American Political Science Review* 153, accessed at <https://doi.org/10.2307/1955619>.

<sup>77</sup> A Ahmed & A Feuer 'Who Was 'El Padrino,' Godfather to Drug Cartel? Mexico's Defense Chief, U.S. Says' *The New York Times* (16 October 2020), accessed at <https://www.nytimes.com/2020/10/16/world/americas/mexico-salvador-cienfuegos-arrested.html>? 'El Padrino' (or rather, General Salvador Cienfuegos) – Mexico's Secretary of Defence – ran one of the biggest drug cartels in Mexico from 2012–2018.

Of course, Acemoglu and Robinson must have some good news and a powerful explanatory framework that provides the grounds for understanding why South Korea is doing better than North Korea and Nogales, Arizona is faring better than Nogales, Sonora. They begin, consistently, but rather oddly, with England's comparatively late entrance into colonial waters.<sup>78</sup>

England has, over most of its history, been something of a backwater. The domestication of livestock and farming arrived almost 6 000 years after it had first begun in the Levant. The Roman Empire never brought the entire isle within its ambit. Scotland refused to be subdued and even forced the Roman legions to build a protective wall to the south. As the Roman Empire began to crumble in the 4th century CE, Britain's fortunes also declined. The next millennium ushered in almost no discernible improvements. Unlike kingdoms in Africa, Europe or Asia, its contributions to math and the natural sciences – or any form of technological innovation – were negligible. Finally, the bubonic plague in the 14th century killed off half of the country's population.

Yet the plague proved to be a 'critical juncture' for England.<sup>79</sup> Roughly a century after the Magna Carta loosened the hold of the king over his barons and made him answerable to them before any new taxes could be raised, the plague created further slack below.<sup>80</sup> With labour suddenly scarce, demand grew. The increased demand enabled serfs to press for greater freedom from their subsistence arrangements with their feudal lords. In England and in a few other parts of Western Europe, ongoing conflict soon shifted in favour of the serfs and created new classes of property owners. The contingent path of development – and the doubled-edged sword of critical junctures – is no better illustrated than by what occurred, contemporaneously, in Eastern Europe. The lords doubled down on their extractive institutions and kept serfs in penury for much of the 18th and 19th centuries. Indeed, Russia's Czar Nicolas managed to keep serfdom largely (though not entirely) intact to the very beginning of the 20th century.<sup>81</sup>

Additional critical junctures had their own cumulative – but highly contingent and by no means necessary – effect. The surprise defeat of the Spanish Armada in 1588 suddenly opened the Atlantic to English seafarers. However, the English found themselves a century behind the Spanish with respect to global conquest and colonial rule. As a result, they settled the less hospitable lands of North America. There they found no kingdoms to readily subject: Native Americans proved too cagey and the settlers too weak. As a consequence, the settlers had to provide much of their own labour in the northern colonies. Artisans, farmers, traders and other craftspersons created viable communities without the subjugation of indigenous populations. Of course, this account does not ignore the beginning of the United States' original sin. In 1619, English pirates raided a Portuguese slave ship off the Angolan coast and delivered the first slaves to the English colonies in the so-called New World. The relative independence of the colonisers from absolutist rule

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<sup>78</sup> One pleasant surprise, that enabled England to set sail, was the defeat of the Spanish Armada in 1588. C Martin & G Parker *The Spanish Armada* (1999); G Mattingly *The Defeat of the Spanish Armada* (2011).

<sup>79</sup> D Acemoglu & J Robinson *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (2012) 97.

<sup>80</sup> S Borsch *The Black Death in Egypt and England: A Comparative Study* (2005).

<sup>81</sup> D Moon *The Abolition of Serfdom in Russia: 1762-1907* (2014): While the statutes abolishing Russia's institution of serfdom were issued in 1861, this was seen as a 'process' rather than an event – finally culminating in abolishment in 1907.

(in Europe) and the *relative* openness and egalitarianism of colony members themselves created novel opportunities for self-rule and trade (that colonies elsewhere did not enjoy.)

Back in England, a parallel set of events also loosened the hold of the monarchy and the aristocracy on the masses. Oliver Cromwell's revolution in 1640 demonstrated that the monarchy could be toppled, even if only to lead to a new form of dictatorship.<sup>82</sup> The restoration of the monarchy as an absolutist institution proved short-lived. With the assistance of William the Orange of the Netherlands, 'Parliament' – an institution that reflected interests far beyond the barons behind the Magna Carta – staged what became known as the 'Glorious Revolution'.<sup>83</sup> While William served as a monarch, he did so on terms favourable to the wide range of parties who exercised various forms of power: from aristocrats to landed gentry to an emergent mercantile class to other wealthy businesspersons.<sup>84</sup>

One limitation had long stultified innovation in Great Britain: the Statute of Monopolies.<sup>85</sup> More than 700 monopolies had been granted by Elizabeth I under the statute and thus ensured that the holders of the monopolies could extract as much as possible from their control of a good or service. (Even though a degree of openness would have enabled the holders of monopolies to profit even more, the attractiveness of extractive, non-competitive arrangements is usually hard to pass up.) The fear of 'idle hands' also seemed to motivate Elizabeth. Under her rule, all inhabitants of England found themselves obliged to wear wool hats. This edict kept lots of individuals busy with knitting for their individual households. When an enterprising individual realised that this process could be mechanised and hats produced at a far greater rate, he petitioned Elizabeth for a patent for his invention and permission to deploy throughout the realm. His request was denied. Elizabeth's reasoning was simple enough: what, after all, would her subjects do with so much 'free' time on their hands?

With William at the helm, and Parliament trimming the sails, the Statute of Monopolies and the reluctance to grant new patents were swept away. Innovators could now capitalise on their inventions. Not surprisingly, some of the very first notable innovations reflected novel improvements to the spinning wheel, and thus what would become one of England's first major (disruptive) industries. The sweeping away of restrictions on innovations, at the same time as political control became a more pluralistic endeavour, the scientific revolution began to reveal how the universe actually worked, and economic arrangements became more inclusive, had unprecedented consequences for human development. The conditions of human existence – heretofore 40 years of grinding it out – began to improve. In addition, the concatenation of the above events brought into existence an ever-burgeoning class of entrepreneurs and the beginning of an industrial revolution that would, for the first time in human history, create a significant disjunction in wealth and overall wellbeing between one or two countries (England and the Netherlands) and the rest of the world.

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<sup>82</sup> S Levinson & J Balkin 'Constitutional Dictatorship: Its Dangers and Its Design' (2010) 94 *Minnesota Law Review* 1789.

<sup>83</sup> J Miller *The Glorious Revolution* (2014).

<sup>84</sup> S Pincus & J Robinson 'What Really Happened During the Glorious Revolution?' (2011) *National Bureau of Economic Research Working Papers* (2011), accessed at <https://www.nber.org/papers/w17206>.

<sup>85</sup> G Calabresi & L Leibowitz 'Monopolies and the Constitution: A History of Crony Capitalism' (2013) 36 *Harvard Journal of Law & Public Policy* 983.

The reciprocal effect of increased and more inclusive political and civil liberties and enhancements in the productive capacity of the English economy – along with many of its erstwhile colonies, the United States, Australia, Canada and New Zealand – as well as the economies of the Netherlands, France and Germany, led to the creation of several of the most successful liberal and social democratic welfare states of the 20th century. Those western-style polities hardly reflect a representative list of contemporary successful liberal democratic welfare states. They just happened to follow a specific, highly contingent, path to development. A significant number of countries across the globe either benefitted from the same drivers as Western Europe or followed different paths of development in order to wind up in roughly the same spot or, as matters stand, in a far better position: Botswana, Uruguay, Tuvalu, Switzerland, Japan, South Korea, Norway, Denmark, Finland, Ireland, Iceland, Lithuania, Malta and, of course, Luxembourg.<sup>86</sup>

On Acemoglu and Robinson's account, these successful liberal or social democratic welfare states possess several signal features. They enjoy:

- high degrees of centralised authority and 'a monopoly on *legitimate* violence';<sup>87</sup>
- relatively inclusive political institutions<sup>88</sup> that rely on democratic decision-making;
- bureaucracies capable of the rational administration of basic public functions and a reasonably fair distribution of public goods, especially education;<sup>89</sup>
- a foundational commitment to *the rule of law*, as well as 'an *unbiased* system of law ... that provides a level playing field within which people can exchange and contract';<sup>90</sup>
- 'inclusive economic institutions ... that allow and encourage participation by the great mass of people in economic activities, that make best use of their talents and skills ... that secure private property ... [and] that permit the entry of new businesses and allow people to choose their careers';<sup>91</sup> and
- inclusive economic institutions that 'pave the way for two other engines of prosperity ... technology and education ... [since] [s]ustained economic growth is almost always accompanied by technological improvements that enable people (labour), land, and existing capital (buildings, existing machines, and so on) to become more productive.'<sup>92</sup>

As with the commitments to experimentalism and flourishing that undergird my own theory of individual, social, political, economic and constitutional development, Acemoglu and Robinson have their own take on virtuous circles:

The virtuous circle works through several mechanisms. First, the logic of pluralistic political institutions makes usurpation of power by a dictator, a faction within the government, or even

<sup>86</sup> M Alavi *Civility Report 2019: Human Rights, Peace, Democracy and Civility Analysis and Scores* (2020). The above list is by no means comprehensive and merely aggregates some of the *Civility Report's* scores across human rights, democracy, global peace and civility.

<sup>87</sup> M Weber 'Politics as a Vocation' in *From Max Weber: Essays in Sociology* (translated by H Gerth & C Wright Mills) (1946). (Emphasis added)

<sup>88</sup> Political inclusiveness – contrary to how the list might read – pre-exists economic inclusiveness. Only a move away from absolutist, extractive political institutions allows for the formation of inclusive economic institutions.

<sup>89</sup> J Dewey *Democracy and Education* (1918).

<sup>90</sup> D Acemoglu & J Robinson *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (2012) 76. (Emphasis added)

<sup>91</sup> *ibid.* at 76–77.

<sup>92</sup> *ibid.* at 79.

a well-meaning president much more difficult ... Pluralism also enshrines the notion of the rule of law, the principle that laws should be applied equally to everybody – something that is naturally impossible under an absolutist monarchy. But the rule of law, in turn, implies that laws cannot simply be used by one group to encroach upon the rights of another. What's more, the principle of the rule of law opens the door for greater participation in the political process and greater inclusivity, as it powerfully introduces the idea that people should be equal not only before the law but also in the political system ... Second, as we have seen several times before, inclusive political institutions support and are supported by inclusive economic institutions. This creates another mechanism of the virtuous circle. Inclusive economic institutions remove the most egregious extractive economic relations, such as slavery and serfdom, reduce the importance of monopolies, and create a dynamic economy, all of which reduces the economic benefits that one can secure, at least in the short run, by usurping political power ... This facet of the virtuous circle made the gradual march of democracy in nineteenth-century Britain both less threatening to the elite and more likely to succeed. This contrasts with the situation in absolutist regimes such as the Austro-Hungarian or Russian empires, where economic institutions were still highly extractive and, in consequence, where calls for greater political inclusion later in the nineteenth century would be met by repression because the elite had too much to lose from sharing power. Finally, inclusive political institutions allow a free media to flourish, and a free media often provides information about and mobilizes opposition to threats against inclusive institutions, as it did during the last quarter of the nineteenth century and first quarter of the twentieth century, when the increasing economic domination of the Robber Barons was threatening the essence of inclusive economic institutions in the United States. Though the outcome of the ever-present conflicts continues to be contingent, through these mechanisms the virtuous circle creates a powerful tendency for inclusive institutions to persist [and] to resist challenges.<sup>93</sup>

However, as the Napoleon-led dispersion of the ideology of the French Revolution makes clear, political emancipation precedes economic emancipation with respect to this conception of a virtuous, developmental circle.<sup>94</sup> The imposition of the Code Napoleon – by military victory – led to the elimination of rigid monarchic, aristocratic and religious caste systems in all of Western Europe, save for Spain and Portugal. Those empires that Napoleon failed to conquer in Central and Eastern Europe – from the Austro-Hungarian Empire to Tzarist Russia (and all the regions in between) – underwent virtually no significant political and legal reform.<sup>95</sup> As a result, they experienced none of the economic benefits of the first industrial revolution (based primarily upon large-scale manufacturing) or the second industrial revolution (a technological revolution that ushered in 'global' use of intranational and international networks of telegraphs and railroads, as well as gas, water and sewage systems, and which subsequently introduced electrical and telephone grids as well as production lines).

A far more detailed history of technological innovation – and its initial political impediments – is taken up in Chapter III. But that history and this account cover roughly the same terrain. The purpose of this account is to show why most states have not become more politically or economically inclusive – and why they often return the state's centralised

<sup>93</sup> D Acemoglu & J Robinson *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (2012) 322–334.

<sup>94</sup> The same holds true for the virtuous circle articulated in *The Selfless Constitution*.

<sup>95</sup> D Moon *The Abolition of Serfdom in Russia: 1762-1907* (2014). While the statutes abolishing Russia's institution of serfdom were issued in 1861, this was seen as a 'process' rather than an event – finally culminating in abolishment in 1907.

power to elites who extract resources for themselves rather than distribute them fairly to society writ large.

Success, as measured by the above desiderata, may be a fleeting and a partial affair. Given the contingency of history and the contestation that marks politically inclusive institutions, it's entirely possible for successful nations to reverse course. The capture of both political and economic institutions by elites may result in the creation of autocratic states that further enrich the wealthy through extractive economic institutions.

Watching a mendacious, narcissistic and sociopathic Donald Trump create a self-induced, if pandemic-caused, depression and subsequent seditious insurrection in the United States may transfix in just the same manner as a video of a large car crash played in slow-motion. However, his election in 2016 and the Republican Party's refusal to govern was set in motion by Richard Nixon's dog-whistle in 1968 to the 'silent majority' – the party's standard issue upper-class base, yellow-dog or Jim Crow Democrats in the South and Midwest,<sup>96</sup> socially conservative evangelical Christians and, subsequently, a loose but powerful affiliation of extremely wealthy and very crazy laissez-faire libertarians as well as some blue collar workers left behind by deindustrialisation.<sup>97</sup> This party's elitist and extractive approach to political and economic institutions – and Trump's four years of

<sup>96</sup> Yellow-dog Democrats were dyed-in-the-wool white supremacist-conservatives who had previously refused, for a 100 years, to join the political party of Abraham Lincoln and the victorious North – the Republican Party – and who used the doctrine of states' rights and the segregationist policies of Jim Crow to ignore (as much as possible) the Emancipation Proclamation, and the 13th, 14th and 15th Amendments during and after the Civil War.

<sup>97</sup> D Belkin 'Charles Koch Says His Partisanship Was a Mistake' *The Wall Street Journal* (12 November 2020), accessed at <https://www.wsj.com/articles/charles-koch-says-his-partisanship-was-a-mistake-11605286893>. Koch, the libertarian tycoon and creator of the Cato Institute, spent decades funding conservative causes that fostered a bitterly split nation. In 2020, Koch admitted that 'he screwed up' and claimed that he 'want[ed] a final act building bridges across political divides.' His mea culpa for a cold civil war of his own making may be 35 years too late. The Koch brothers – when I met them in 1985 – were truly on the fringe of American politics. Libertarians, a loopy crew, rarely polled 1% of votes, when they actually made it on to the ballot. Over time, using new media and social media, the Koch brothers and others exploited the inclinations of many so-called 'Reagan Democrats' through value-based appeals to their own autonomy – whether it be a Weberian sense of their own work ethic, their right to bear arms, or a very general American sensibility of the right to be left alone. Ronald Reagan captured this very American ethos in his famous Inaugural Address of January 1981 when, in the midst of his panegyric, he claimed that: 'In this present crisis, government is not the solution to our problem, government IS the problem. It isn't so much that liberals are ignorant, it's just that they know so much that isn't so.' Reagan's sunny disposition and the fact that 70% of Americans (at the time) lacked a university education painted Northeastern liberal elites into a corner of their own making – in which they appeared to be speaking 'for' others and not on their purported constituents' behalf. (South African progressives tend to make the same sort of mistake with respect to the value set of many individuals on behalf of whom they speak.) Peter Beinart explained this political dynamic as follows:

What is a 'Reagan Democrat?' At its most literal, it's a Northern, white, noncollege-educated Democrat who actually voted for Ronald Reagan. But there aren't many of them left. ... So when people talk about 'Reagan Democrats' today, they don't mean Democrats who actually voted for Reagan. They mean the people who resemble them demographically: Northern blue-collar whites ... Not only are blue-collar whites a smaller share of the electorate than in 1980, they also behave differently. As American University political scientist David Lublin notes, 'The early 1980s were the height of weak partisanship with voters much more willing to defect from their party in elections than today.' Back then, Democrats were less homogeneously liberal. Lots of whites with fairly conservative views on race, gender, and national security still identified with the party. So ideologically, voting for Reagan wasn't much of a stretch.

autocratic, destabilising and self-enriching rule<sup>98</sup> – has turned the United States from one of the wealthiest and most inclusive democratic welfare states into a nation with the highest Gini coefficient amongst advanced economies and political institutions deeply riven by a cold civil war.<sup>99</sup> Statistically, poverty in the United States reached a record low of 10.5% by 2019 and median incomes and households covered by health insurance also rose due to a strong economy and the Affordable Care Act.<sup>100</sup> That said, real power and wealth remain concentrated in the hands of the few – and the few continue to be predominantly white. While ethnic and racial minorities constitute 40% of the overall population, only 12.5% of board directors of ‘the 3 000 largest, publicly traded companies’ come from minority communities.<sup>101</sup>

### Joseph Biden’s election as President and Kamala Harris’s election as Vice-President

P Beinart ‘The Myth of the ‘Reagan Democrat’: The Notion that Donald Trump can Convert a Large Swath of White, Blue-Collar Democrats is a Fantasy. They Don’t Exist’ *The Atlantic* (28 March 2016), accessed at <https://www.theatlantic.com/politics/archive/2016/03/the-myth-of-the-reagan-democrat/475608/>.

<sup>98</sup> N Confessore et al. ‘The Swamp That Trump Built: A Businessman-President Transplanted Favor-Seeking in Washington to His Family’s Hotels And Resorts – And Earned Millions as a Gatekeeper to His Own Administration’ *The New York Times* (10 October 2020), accessed at <https://www.nytimes.com/interactive/2020/10/10/us/trump-properties-swamp.html>:

It was springtime at President Trump’s Mar-a-Lago club, and the favor-seekers were swarming. In a gold-adorned ballroom filled with Republican donors, an Indian-born industrialist from Illinois pressed Mr. Trump to tweet about easing immigration rules for highly skilled workers and their children. ‘He gave a million dollars,’ the president told his guests approvingly, according to a recording of the April 2018 event. Later that month, in the club’s dining room, the president wandered over to one of its newer members, an Australian cardboard magnate who had brought along a reporter to flaunt his access. Mr. Trump thanked him for taking up a role in the construction of an Ohio paper mill and box factory, whose grand opening the president would attend. And in early March, a Tennessee real estate developer who had donated lavishly to the inauguration, and wanted billions in loans from the new administration, met the president at the club and asked him for help. Mr. Trump waved over his personal lawyer, Michael D. Cohen. ‘Get it done,’ the president said, describing the developer as ‘a very important guy,’ Mr. Cohen recalled in an interview. Campaigning for president as a Washington outsider, Mr. Trump electrified rallies with his vows to ‘drain the swamp.’ But Mr. Trump did not merely fail to end Washington’s insider culture of lobbying and favor-seeking. He reinvented it, turning his own hotels and resorts into the Beltway’s new back rooms, where public and private business mix and special interests reign.

‘The President’s Taxes’ *The New York Times* (9 October 2020), accessed at <https://www.nytimes.com/interactive/2020/10/09/us/donald-trump-taxes-las-vegas.html>. The 212 indictments brought against Trump officials and errand boys during his first term (along with seven convictions) are three times the 70 indictments brought against President Nixon and his cronies during the Watergate investigations that forced Nixon’s resignation.

<sup>99</sup> E Badger & A Parlapiano ‘The Rich Cut Their Spending – That Has Hurt All the Workers Who Count on It: The Steepest Declines in Spending During the Coronavirus Recession Have Come from the Highest-Income Places’ *The New York Times* (19 June 2020), accessed at <https://www.nytimes.com/2020/06/17/upshot/coronavirus-spending-rich-poor.html?>

<sup>100</sup> J Smialek, S Kliff & A Rappaport ‘US Poverty Hit a Record Low Before the Pandemic Recession. The Share of Americans in Poverty Declined in 2019 and Median Incomes were the Highest on Record, a Census Bureau Report Shows’ *The New York Times* (15 September 2020), accessed at <https://www.nytimes.com/2020/09/15/business/economy/poverty-record-low-prior-to-pandemic.html>: Poverty levels were the lowest since record keeping began in 1959.

<sup>101</sup> P Eavis ‘Diversity Push Barely Budges Corporate Boards to 12.5%, Survey Finds’ *The New York Times* (15 September 2020), accessed at <https://www.nytimes.com/2020/09/15/business/economy/corporate-boards-black-hispanic-directors.html>.

in November 2020 – with all institution-testing, the seditious calls for mob insurrection and the other histrionics of an embittered, perverse exit by the incumbent<sup>102</sup> – may restore some degree of inclusivity to a divided nation ravaged by a pandemic that almost 400 000 lives by the end of 2020 and left an economy in its deepest recession since the Great Depression.<sup>103</sup> Biden’s first order of duty will be to oversee the rollout of vaccines to over 300 million Americans, while still sticking to his commitment to mandatory social distancing, mask-wearing and lockdown restrictions to stem transmission levels of SARS-CoV-2 and COVID-19 infections that had surpassed 200 000 per day in December 2020. He has not only committed himself to free testing for all and hiring 100 000 people to set up a national contact-tracing programme, but for free vaccines for insured and uninsured alike as they come on line in late 2020 and early 2021. That’s no small task. However, it’s certainly one Biden owes to both the majority of Americans who delivered

<sup>102</sup> To be clear – Trump is the creation of an equally perverse Republican Party that is now both too scared of the monster that they have created and too in love with the power they possess as a result of his current popularity and his success in down ballot elections (even if he lost his own.)

<sup>103</sup> Despite his famous remark during the 1992 presidential election campaign (during what turned out to be a mere nine-month recession), that ‘It’s the Economy Stupid!’, Bill Clinton neither believed that to be true – save for the moment – nor did his politics reflect that assessment. First, Clinton’s support for the North American Free Trade Act in the 1992 elections helped generate a 19% third party insurgency by an anti-NAFTA independent Ross Perot – who told blue-collar workers what they already knew – that both parties had sold them out. Clinton’s subsequent fear of the Republican Party and Newt Gringrich’s 1994 Contract with America pushed him even further to the right. He had learned one thing as the former Governor of Arkansas – how not to lose an election – and he didn’t want to lose the Presidency in 1996. Thereafter, the Democratic Party had virtually no left wing until Socialist-Independent Senator Bernie Sander’s bid to win the Democratic nomination for President in 2016 reintroduced left-wing thought into the party and generated progressive victories in Congress during the 2018 midterms. However, while the optics of the Biden Administration may look different, the new President’s instincts remain those of a centrist Clinton Democrat. Again – as his campaign reflected – he understood that he needed to embrace the self-understanding of ‘so-called’ Reagan Democrats, at the same time as speaking to the values of suburban Democrats and new progressive Democrats. All that being said, Biden would likely not have won the Democratic nomination (over Sanders) or the presidential election (over Trump) had it not been for a mismanaged pandemic and a crushed economy. Contrary to Clinton’s quip (uttered during a short-term recession), people do not simply vote their pocketbook: they are just as likely to vote for a set of (non-economic) values commensurate with their own. J Hale ‘The Making of the New Democrats’ (1995) 110 *Political Science Quarterly* 207, accessed at <https://doi.org/10.2307/2152360>. Clinton was not *sui generis*. Clinton – and now Biden – owed their elections as much to the creation of the Democratic Leadership Council in 1985. In response to the success of the Republican Party’s strategy, the DLC moved the party away from the left to the centre – where more votes were to be had if the party wished to reclaim both the White House, and both Houses of Congress, from time to time. Thus, if the Republican Party’s success can be traced to a conscious 50-year arc to attract a specific concatenation of voters, then the Democratic Party’s elite establishment’s 30-year narrative explains the consistent absence of a left wing in the party and why both party’s served – and here’s the big takeaway – narrow elites and why the political and economic institutions from the 1980s onwards moved away from inclusive institutions and policies and toward extractive institutions and policies. This account is consistent with Acemoglu and Robinson’s theory that movements toward political and economic inclusivity – as the United States experienced from the 1930s to the 1980s – do not preclude a return toward elitist, autocratic and extractive institutional arrangements. Moreover, it provides greater explanatory power – across a range of nations (from North America to Europe to Asia to South America to Africa) – for the similar behaviour of political leadership in both democratic and autocratic nations, as well as in developed nations and in developing nations. Contrary to what Martin Luther King Jnr claimed, the long arc of history may just as likely bend toward instability and collapse, as it does toward justice.

him to office on the heels of a pandemic and a crushed economy and to marginalised communities that breathed life back into the Black Lives Matters Movement which placed systemic racism squarely back at the centre of American political life. The latter set of voters helped deliver Biden's Electoral College victory (as judged by his extremely narrow wins across seven battleground states).<sup>104, 105</sup> He has also promised to increase:

- direct payments to families in need;
- the minimum wage to \$15/hr;
- student loan forgiveness up to \$50 000 (through an executive order that will provide a massive economic stimulus to minority communities);
- rescind through executive orders the truly vicious and racist immigration policies of his predecessor;
- to reinstate the Affordable Care Act;
- expand tuition-free colleges and universal preschool; and
- with control of the House and the Senate, pass a \$1.9 trillion relief and stimulus package as his second order of business.

In addition, with control of the House and the Senate, Biden's significant move to appease the left wing of the party will be a \$2 trillion investment in green energy – along with a promise that new jobs created in the sector will enhance the lives of working-class employees. An equally profound challenge will be to restore American standing abroad. Biden will re-enter the Paris Accord on his first day in office. While recommitting fully to NATO and the WHO fits Biden's multilateralism, his administration will find responding to China, Russia and Iran somewhat more daunting. Each has filled the vacuum left by an isolationist Trump.

The Democratic Party's move to the left cannot paper over the fact that the United States has two sets of economic institutions – one for the wealthy and one for the majority of poor, working-class and middle-class citizens. After 50 years of Republican revanchist politics, and 30 years of Democratic centrist policies, the United States has become largely extractive economically, while caught in a cold civil political war that cannot be easily reversed over the course of a mere four years. Demographics may appear to be destiny for Democrats, but too many Trump-inclined voters exist to assume that the Republican Party will stop being an obstructionist party that refuses to govern (save on its own extractionist terms). Here again is the problem presented at the outset of this chapter. If flawed democracies such as the United States do not possess the highly-prized wherewithal to resolve their own endogenous problems of collective action, then what deep contribution can they possibly make to the solution of exogenous, global wicked problems?

<sup>104</sup> K Evelyn 'How Black Voters Lifted Biden's Bid for the White House' *The Guardian* (5 November 2020), accessed at <https://www.theguardian.com/us-news/2020/nov/05/black-voters-joe-biden>. Though Trump lost the presidential elections — despite receiving more votes than he or Hillary Clinton did in 2016 — down ballot Republicans generally did far better. He got out the vote for Republicans (which explains their largely inexplicable post-election support for Trump), but he lost his own seat in power because enough Americans held him accountable for all that went wrong in 2020. D Montanaro 'The 2020 Election Was A Good One For Republicans Not Named Trump' *National Public Radio* (11 November 2020), accessed at <https://www.npr.org/2020/11/11/933435840/the-2020-election-was-a-good-one-for-republicans-not-named-trump>.

<sup>105</sup> Biden has also vowed to promote incarceration reduction efforts, eliminate mandatory minimum sentences, decriminalise marijuana, expunge prior cannabis convictions, emphasise community policing and end the death penalty – all issues that disproportionately affect black communities and communities of colour.

The United Kingdom's Conservative Party's right wing, nationalist Brexit Strategy resulted in a similar reversal of domestic fortunes. Its departure from the European Union leaves it in a similar political position as the United States with respect to the resolution of wicked problems – alone, and on the sidelines, and with only itself to blame when things go sideways globally in a manner that only harms the now tiny island's interests. For example, its benighted approach to the COVID-19 pandemic correlates with its own fairly high Gini coefficient, as compared to the rest of the European Union, from which it can no longer seek support. While both the United Kingdom and the United States have experienced well-documented problems with policies that have accelerated divisions in class, ongoing systemic racial and ethnic discrimination have also undermined each country's attempts to create a more just and fair social order.

Empires rise. Empires fall. And as Acemoglu and Robinson have shown, so too do once relatively inclusive societies. How close are these two relatively ancient, beleaguered, deeply riven, partially inclusive, and partially extractive democracies to failure? Perhaps a comparison with other more or less inclusive, advanced democracies is in order. Poverty and development expert Jeffrey Sachs acknowledges problems in using correlations between Gini coefficients and systemic exclusion to determine the fate of a nation.<sup>106</sup> As a result, neither he nor others are too quick to give other Western, Central and Eastern European countries with lower Gini coefficient rates than the US or the UK a free pass or even higher marks.

Germany largely solved its second-class citizenship problems – which Marx captured in his essay 'On the Jewish Question' – by ruthlessly and efficiently carrying out its 'final solution' before and during World War II.<sup>107</sup> But it's not simply that Western, Central and Eastern European countries assisted Germany in making Europe 'Judenfrei' during the war. As Tony Judt details in *Postwar*, they also engaged in a mad-scramble to rewrite their borders and reorganise their populations into homogenous-nationalist entities through ethnic cleansing in the years immediately after World War II.<sup>108</sup> It's far easier to create an inclusive set of political and economic institutions when the polity seems to be relatively homogeneous. It is, therefore, hard to credit any analysis that applauds the lower Gini coefficients of soft-fascist, illiberal democracies in Hungary, Austria and Poland. Indeed, as Ben Rhodes wrote, we might as well drop the 'democracy' when it comes to describing states like Hungary:

Over the past decade, Hungary's Prime Minister Viktor Orbán and his Fidesz Party have transformed a democracy into something close to an autocracy. Shortly after his first re-election in 2014, Orbán gave a speech outlining his political project. Citing globalization's economic and social failures, Orbán defended the course he had set by noting that those nations best prepared for the future were 'not liberal, not liberal democracies, maybe not even democracies.' Drawing on that message, he defined a form of regime change. 'The Hungarian,' he said, 'is not a simple sum of individuals, but a community that needs to be organized, strengthened,

<sup>106</sup> J Sachs 'Inequality Fuels COVID-19 Mortality' *Project Syndicate* (2 July 2020), accessed at [https://www.project-syndicate.org/commentary/inequality-fuels-covid19-mortality-by-jeffrey-d-sachs-2020-06?utm\\_](https://www.project-syndicate.org/commentary/inequality-fuels-covid19-mortality-by-jeffrey-d-sachs-2020-06?utm_) .

<sup>107</sup> The problem recurred with Turkish 'workers' in the 1970s and 1980s, and more recently with Prime Minister Merkel's generous admission of nearly 800 000 Syrian refugees. The latter move gave rise to the white supremacist AfD – who have claimed roughly 10% of the electorate. That's hardly a negligible number for a country that has been committed to the proposition of 'Never Again'.

<sup>108</sup> T Judt *Postwar: A History of Europe Since 1945* (2005).

and developed, and in this sense, the new state that we are building is an illiberal state, a non-liberal state.<sup>109</sup>

These regimes continue to target – if for no other reason than the electoral success of nationalist-cum-white supremacist politics at the ballot box – immigrants, Roma, LGBT persons, Muslims and Jews.<sup>110</sup>

Perhaps this nationalist/neo-Nazi turn in illiberal democracies that had no experience of inclusive political and economic institutions should come, as Jürgen Habermas predicted in 1996, as no surprise.<sup>111</sup> One cannot expect those Central and Eastern European states that had entirely absolutist and extractive political and economic institutions – created and controlled by the Soviet Union and the Communist Party in every country behind the Iron Curtain – to be transformed into inclusive democracies simply by adopting constitutions that guaranteed the rule of law and democratic decision-making, or economic institutions that could benefit from membership in the EU and collaboration with older Western members of the EU. Compete they have not. However, the free movement of labour in the EU and access to wealthier European markets has enabled these three Central European countries to grow rather rapidly. If their low Gini coefficients mean anything, they reflect the absence of accumulation of sufficient capital to generate the condition for both innovation and technological development. One can be more equal – and still have less by way of public goods. While the group psychology of nationalism is discussed at length in Chapter V, the nationalist turn, as Edmund Burke noted long ago, reflects a very human tendency to put the needs of kith, kin and clan before the abstract needs of others and, more pointedly, the egalitarian ‘socio-economic’ needs of less privileged members of one’s own society.<sup>112</sup> No one really wants to level down economically: and yet, as we have

<sup>109</sup> B Rhodes ‘A Second Trump Term Will Leave America’s Political System and Culture Looking Even More Like Orbán’s Hungary’ *The Atlantic* (15 June 2020), accessed at <https://www.theatlantic.com/ideas/archive/2020/06/american-orbanism/612658/>.

<sup>110</sup> L Cooper ‘Hungary: Europe’s Creeping Fascism’ *Red Pepper* (12 July 2019), accessed at <https://www.redpepper.org.uk/hungary-europes-creeping-fascism/>; D Albrich ‘Austria: Fascism in Government’ (2019) 161 *International Socialism: A Quarterly Review of Socialist Theory*, accessed at <https://isj.org.uk/austria-fascism-in-government/>.

In December 2017 the Freedom Party of Austria (FPÖ) formed a coalition government with the conservative Austrian People’s Party (ÖVP) ... a real shock to anti-fascists around the world. An international call to boycott Austria’s new cabinet, first published in the French newspaper *Le Monde*, rightly labelled the junior partner FPÖ as the ‘heirs of Nazism’. One FPÖ leader described himself as a ‘national democrat’ – meaning that [e]veryone has the right to take part in political life, but the democratic state must serve national interests ... A democracy in the service of national interests is a system that limits the access of those who do not fulfill subjective criteria.

That self-description fits the definition of illiberal democracy or soft fascism. C Ciobanu ‘Democracy Digest: The Dust Settles after the Polish Election’ *Reporting Democracy: Balkin Investigative Reporting Network* (November 15, 2019), accessed at <https://balkaninsight.com/2019/11/15/democracy-digest-the-dust-settles-after-polish-election/>; ‘Poland’s Right-Wing Law and Justice Party Clings on to the Presidency: The Campaign Invoked Classic Populist Themes’ *The Economist* (13 July 2020), accessed at <https://www.economist.com/europe/2020/07/13/polands-right-wing-law-and-justice-party-clings-on-to-the-presidency?utm>.

<sup>111</sup> J Habermas *Beyond Facts and Norms* (1996).

<sup>112</sup> cf J Heinrich *The WEIRDest People in the World: How the West Became Psychologically Peculiar and Particularly Prosperous* (2020). I am deeply suspicious of totalising accounts of human history because it’s simply too messy – and even more suspicious of anthropological accounts that rest on such flimsy departure points as the Catholic Church’s injunction against marrying one’s cousin (dating back to the 5th

seen in the United States, the United Kingdom, Hungary and Poland, people may be willing to do so if it serves another powerful set of values, say that of a *volk*, or a religiously inspired commitment to autonomy. Quite often, life's misfortunes are less painful when one has someone to look down upon.

Speaking of levelling down, this account would not be complete without a brief rehearsal of the Soviet Union's rise and fall. Using all the coercive and killing power at his disposal, Stalin turned the USSR from an agricultural backwater into something of an industrial success story.<sup>113</sup> While Stalin's political and economic institutions remained highly extractive, and meaningful markets did not exist, the Soviet Union was able to achieve rapid economic growth because it could use the power of the state to move resources from agriculture, where they were very inefficiently used, into industry:

The Soviet Union implemented the collectivization of its agricultural sector between 1928 and 1940 during the ascension of Joseph Stalin ... The policy aimed to integrate individual landholdings and labour into collectively-controlled and state-controlled farms. The Soviet leadership confidently expected that the replacement of individual peasant farms by collective ones would immediately increase the food supply for the urban population, the supply of raw materials for processing industry, and agricultural exports. Planners regarded collectivization as the solution to the crisis of agricultural distribution (mainly in grain deliveries) that had developed from 1927. This problem [of extreme food shortages] became more acute as the Soviet Union pressed ahead with its ambitious industrialization program, meaning that more food needed to be produced to keep up with urban demand. In the early 1930s over 91% of agricultural land became collectivized as rural households entered collective farms with their land, livestock, and other assets. The collectivization era saw several famines, many due to the technological backwardness of the USSR at the time, [and] critics have also cited deliberate action on the government's part. The death toll cited by experts has ranged from 7 million to 14 million.<sup>114</sup>

Stalin eventually ran into the limits of mass slaughter, purges and ideology. After giving up on the rhetoric of creating a 'socialist man or woman' who would give to the extent of her or his ability and take no more than that he or she would need, Stalin turned to other means of increasing productivity. Indeed, he criticised 'equality mongering'. He began to pay bonuses to manufacturers and others who met their goals.<sup>115</sup> But this shift only led to meeting current levels of production. Without incentives to find more efficient means of producing more goods – and without the capital to try – neither managers nor workers had any incentive to work harder or create new business models or novel technologies. In fact, a failed attempt would lead to a loss of monthly bonuses, while a successful attempt would not lead to enhanced bonuses (only a new, higher threshold that had to be met). By

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century CE). But since I do believe that the success of inclusive democracies rests to a large degree on the pre-existence and continued existence of particular social traditions and practices, and do not believe that these practices are determined by specific regional or national histories, this book drew my attention simply because it ends with roughly similar normative conclusions as my own.

<sup>113</sup> RC Allen *Farm to Factory: A Reinterpretation of the Soviet Industrial Revolution* (2003).

<sup>114</sup> 'Collectivization in the Soviet Union' *Wikipedia* (3 July 2020), accessed at [https://en.wikipedia.org/wiki/Collectivization\\_in\\_the\\_Soviet\\_Union](https://en.wikipedia.org/wiki/Collectivization_in_the_Soviet_Union).

<sup>115</sup> H Seibel & U Damachi 'Equity under Self-Management: Equality or Inequality?' (1982) *Self-Management in Yugoslavia and the Developing World* 139.

the late 1970s, the Soviet Union had – save for certain highly incentivised domains – run into the limits of their manufacturing model.<sup>116</sup>

Forget about pressure from the United States, though it could have softened the fall caused by the Soviet Union’s abrupt shifts. The Soviet Union fell apart because Gorbachev’s ‘radical’ policies of Perestroika and Glasnost were ill-conceived. Perestroika – ‘Restructuring’ – introduced some facets of a market economy. It failed to create conditions for fluid metrics of supply and demand, enforceable property ownership, access to capital or the ability to foster the accumulation of capital required for technological innovation.<sup>117</sup> These systemic failures in the attempt to move from an extractive regime to an inclusive regime killed the shift from a command and control economy to a more open economy. The demise of the USSR was also hastened by Gorbachev’s policy of Glasnost or ‘Openness’.<sup>118</sup> The loosened restrictions on the media, and greater freedom of expression and association only placed increased pressure on the state to admit its failures, to provide more and more political and civil liberties, and to recognise the demands for greater independence or complete self-determination from various ‘regions’ that had been sovereign states prior to their absorption into the Soviet Union after World War II.

Within a mere six years, Gorbachev went from being the unelected secretary-general of the Communist Party and President of the Soviet Union in 1985, to its first elected President in 1989, to an almost complete by-stander in 1991, as the USSR collapsed.<sup>119</sup> Gorbachev later admitted that a slower opening up of both the economy and the polity designed to create greater inclusivity and productivity – with proper support from the West – would have likely proven more successful.<sup>120</sup> Instead, after Russia’s extremely brief

<sup>116</sup> E Brainerd ‘Reassessing the Standard of Living in the Soviet Union: An Analysis Using Archival and Anthropometric Data’ *Working Paper 1958, The Institute for the Study of Labour* (2006). ‘Both Western and Soviet estimates of GNP growth in the USSR indicate that GNP per capita grew in every decade – sometimes rapidly – from 1928 to 1985.’

<sup>117</sup> P Boettke *Why Perestroika Failed* (1993).

<sup>118</sup> D Benn ‘“Glasnost” and the Media’ in S White, A Pravda & Z Gitelman (eds) *Developments in Soviet and Post-Soviet Politics* (1992) 174.

<sup>119</sup> A Brown *The Gorbachev Factor* (1997).

<sup>120</sup> F Weir ‘Mikhail Gorbachev: We Should Have Preserved the Soviet Union’ *The Christian Science Monitor* (13 October 2011), accessed at <https://www.csmonitor.com/World/Europe/2011/1013/Mikhail-Gorbachev-We-should-have-preserved-the-Soviet-Union>:

In a dizzying six years of intensive reforms after coming to power in 1985, Gorbachev opened up the Soviet media to open debate, allowed free speech, loosened controls on political organization, and replaced Communist Party fiat with elected legislatures at every level of power. But his efforts foundered amid the economic chaos that resulted from his attempts to tinker with Communist central planning, and met growing opposition from national elites in non-Russian republics, who used their new freedoms to press for independence. He also suffered from the mass defections of liberal supporters who accused him of moving too slowly and threw their backing behind his more radical-sounding rival, Boris Yeltsin.

J Steele ‘Mikhail Gorbachev: I Should Have Abandoned the Communist Party Earlier’ *The Guardian* (16 August 2011), accessed at <https://www.theguardian.com/world/2011/aug/16/gorbachev-guardian-interview>:

His second regret ... is that he did not start to reform the Soviet Union and give more power to its 15 republics at an earlier stage. By the time he began to think of creating a looser federation in early 1991 the three Baltic states had already declared independence. Blood had flowed in Lithuania and Azerbaijan in the Caucasus. Under its ambitious leader, Boris Yeltsin, Russia, the largest republic, was flexing its muscles and demanding more control over the Soviet budget. Some analysts say the whole Soviet system was unreformable and any change was bound to lead to an unstoppable process of increasingly dramatic transformation. It was inevitable, according to this analysis, that Gorbachev lost control.

flirtation with a democratic state, Vladimir Putin became President and recreated the prior extractive political and economic institutions that benefitted members of his party and a few oligarchs, while simultaneously lowering the standards of living of most Russians to below that which they had enjoyed under the Soviet Union.

What of China? It has operated under extractive political and economic institutions – whether monarchic dynasties or more recent communist rule – for roughly three millennia.<sup>121</sup> When Mao took over in 1948, China was one of the poorest countries in the world.<sup>122</sup> Poor – despite its innumerable contributions to math, science, warfare, trade and various innovations throughout much of its history. Mao doubled down on the country's hardship. His 'Great Leap Forward' ignored drought conditions and created policies that led to the great famine of 1958–1962. The death toll ranged from 15 million to 40 million.<sup>123</sup> (A democratic India, by contrast, suffered far, far fewer deaths as a result of the famine.) China's subsequent Cultural Revolution – initiated by Mao's Gang of Four in 1966 – proved to be almost as devastating:

The Cultural Revolution crippled the economy, ruined millions of lives and thrust China into 10 years of turmoil, bloodshed, hunger and stagnation. Gangs of students and Red Guards attacked people wearing 'bourgeois clothes' on the street, 'imperialist' signs were torn down and intellectuals and party officials were murdered or driven to suicide.<sup>124</sup>

Roughly two million more people died during this period of self-immolation.

A post-Mao China seemed to learn something from these errors in judgment. The politburo initiated a course of internal economic liberalisation designed to reverse the devastation and raise the country's standard of living. The timing could not have been more propitious. The reforms occurred at almost exactly the same time as conservative monetary and trade policies in the West began to take hold. While this shift in manufacturing from local to global proved devastating to the working classes in many Western liberal democratic economies, they enabled China to grow by roughly 10% per annum from the 1980s through the mid-2010s. China's evolution from low-wage manufacturing (for firms offshoring production) to its current expansion into the high tech sector (where it recently controlled 150 of 500 billion-dollar start-ups) enabled the nation to lift 850 million people out of poverty.<sup>125</sup> China thereby accounted for 90% of the UN's Millennium Development Goals (MDGs) by ridding the world of half of its extreme poverty by 2015.

<sup>121</sup> M Scarpari *Ancient China: Chinese Civilization from its Origins to the Tang Dynasty* (2000).

<sup>122</sup> S Du, H Wang, B Zhang, F Zhai & B Popkin 'China in the Period of Transition from Scarcity and Extensive Undernutrition to Emerging Nutrition-Related Non-Communicable Diseases, 1949–1992' (2014) 15 *Obesity Reviews* 8, accessed at <https://doi.org/10.1111/obr.12122>.

<sup>123</sup> X Meng, N Qian & P Yared 'The Institutional Causes of China's Great Famine, 1959–1961' (2015) 82 *The Review of Economic Studies* 1568, accessed at <https://doi.org/10.1093/restud/rdv016>; V Smil 'China's Great Famine: 40 Years Later' (1999) 319 (7225) *British Medical Journal* 161, accessed at <https://doi.org/10.1136/bmj.319.7225.1619>.

<sup>124</sup> T Phillips 'The Cultural Revolution: All You Need to Know about China's Political Convulsion' *The Guardian* (10 May 2016), accessed at <https://www.theguardian.com/world/2016/may/11/the-cultural-revolution-50-years-on-all-you-need-to-know-about-chinas-political-convulsion>.

<sup>125</sup> 'The World Bank in China: An Overview' *World Bank* (2020), accessed at <https://www.worldbank.org/en/country/china/overview>:

China has achieved substantial development success since its reform and opening up in 1978. Today, China is an upper middle-income country but has remaining challenges. The World Bank is working with China to address *institutional gaps* and increase its contribution to *global public goods*.

Yet China remains an upper middle-income country and almost 400 million people live below the food poverty line of \$5/day. Moreover, its accelerated growth has already led to deindustrialisation and limits on low-wage manufacturing capacity. According to the World Bank:

Over the past few years, growth has moderated in the face of structural constraints, including declining labor force growth, diminishing returns to investment, and slowing productivity. The challenge going forward is to find new drivers of growth while addressing the social and environmental legacies of China's previous development path. China's high growth based on resource-intensive manufacturing, exports, and low-paid labor has largely reached its limits and has led to economic, social, and environmental imbalances. Reducing these imbalances requires shifts in the structure of the economy from low-end manufacturing to higher-end manufacturing and services, and from investment to consumption.<sup>126</sup>

In its overview, the World Bank refers to China's 'institutional' gaps as well as its failure to produce global public goods. While silent about the abuse of international law as China builds colonial-style extractive structures along the Silk Road Economic Belt through Asia, Europe and Africa, the World Bank does note that 'China is the largest emitter of greenhouse gases'.

One might expect economic centrists to suggest that the Silk Road Economic Belt component of the Belt and Road Initiative, 'represents an ambitious Chinese vision to promote infrastructural development and connectivity, and stimulate economic integration across the Eurasian continent.'<sup>127</sup> That sounds great. Until you read what turns out to be Friedrich Ebert Stiftung/Stockholm International Peace Research Institute's next sentence: 'Ostensibly an economic initiative, the Belt also has important strategic implications, and is likely to interact with local security dynamics in many of the states with which China is partnering in a significant way.'<sup>128</sup> Indeed. If you happen to be Sri Lanka, then you know that late payments on a loan may cost you a port on your own sovereign territory.<sup>129</sup> After Sri Lanka failed to make payments timeously, China took possession of the Hambantota Port, and 15 000 surrounding acres, for 99 years. So much for debt forgiveness. A one-off? Kenya still stands to lose control of its incredibly lucrative Mombasa Harbour should it

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<sup>126</sup> *ibid.*

<sup>127</sup> R Ghiasy & J Zhou *The Silk Road Economic Belt: Considering Security Implications and EU-China Cooperation Prospects* Friedrich Ebert Stiftung/Stockholm International Peace Research Institute (2017), accessed at <https://www.fes-asia.org/news/the-silk-road-economic-belt/>.

<sup>128</sup> *ibid.*

<sup>129</sup> M Abi-Habib 'How China Got Sri Lanka to Cough Up a Port' *The New York Times* (June 25, 2018), accessed at <https://www.nytimes.com/2018/06/25/world/asia/china-sri-lanka-port.html>:

Every time Sri Lanka's president, Mahinda Rajapaksa, turned to his Chinese allies for loans and assistance with an ambitious port project, the answer was yes. Yes, though feasibility studies said the port wouldn't work. Yes, though other frequent lenders like India had refused. Yes, though Sri Lanka's debt was ballooning rapidly under Mr. Rajapaksa. Over years of construction and renegotiation with China Harbor Engineering Company, one of Beijing's largest state-owned enterprises, the Hambantota Port Development Project distinguished itself mostly by failing, as predicted. With tens of thousands of ships passing by along one of the world's busiest shipping lanes, the port drew only 34 ships in 2012. And then the port became China's. Mr. Rajapaksa was voted out of office in 2015, but Sri Lanka's new government struggled to make payments on the debt he had taken on. Under heavy pressure and after months of negotiations with the Chinese, the government handed over the port and 15 000 acres of land around it for 99 years in December.

default on extremely large loans provided by China.<sup>130</sup> In addition to the Mombasa Port, other scholars note:

Kenya could also be made to give China control of the Inland Container Depot in Nairobi. Kenyan media reported that ‘implications of a takeover would be grave, including the thousands of port workers, who would be forced to work under Chinese lenders’ ...

Debt-trap diplomacy is a deceptive method adopted by China under the BRI scheme, wherein the Chinese first lend huge monies under opaque loan terms to unsuspecting developing nations in the garb of development, only to strategically leverage the recipient country’s indebtedness for its own economic, military, or political ends or to seize its assets as a means of repayment.<sup>131</sup>

Analysis conducted by the Centre for Global Development suggests that both Ethiopia and Egypt stand to lose similar sovereign assets as result of increasing debt distress on loans procured as part of China’s Belt and Road Initiative. China currently backs one out of every five infrastructure loans taken out by African countries – and 40 of 54 nations on the continent have such loans with China.<sup>132, 133, 134</sup>

However, while China’s extractive political and economic conduct throughout the world may have only just begun, its behaviour may also mask a pronounced economic slowdown and a growing vulnerability amongst powerful nations less willing to tolerate its belligerent antics. For those who seek an alternative to the Bretton Woods Institutions, the Chinese Government’s own public pronouncements on the dual purpose of the Belt

<sup>130</sup> D Chaudhury ‘Kenya Risks Losing Port to China Casting Shadow Over India’s Outreach in Eastern Africa’ *The Economic Times/The India Times* (20 November 2019), accessed at <https://economictimes.indiatimes.com/industry/transportation/shipping/-transport/kenya-risks-losing-port-to-china-casting-shadow-over-indias-outreach-in-eastern-africa/articleshow/72136046.cms?from=mdr>.

<sup>131</sup> IANS ‘China’s Debt-Trap Diplomacy Hit, Kenyan Court Halts Project’ *Outlook* (1 July 2020), accessed at <https://www.outlookindia.com/newscroll/chinas-debttrap-diplomacy-hit-kenyan-court-halts-project/1882547>.

<sup>132</sup> While Central Asia may be of less economic interest, China has conducted ‘co-operative’ military operations with Pakistan, Afghanistan and Tajikistan. R Ghiasi & J Zhou *The Silk Road Economic Belt: Considering Security Implications and EU–China Cooperation Prospects* (2017):

Central Asia was of lower strategic priority for China prior to the 2000s, but has risen in prominence in China’s foreign relations (a) as a zone of strategic interest for the security of Xinjiang in western China; (b) for its commercial and resource interests; and (c) as a ‘testing ground’ for China’s foreign engagements – including multilateral institution building. China has emerged as the region’s biggest trade partner and a major energy client. Through the platform of the SCO, China has increased its security ties with states through bilateral and joint military exercises, as well as information sharing, largely oriented around combating the ‘three evils’.

<sup>133</sup> South Asia, Southeast Asia and East Asia are another issue entirely. China crossed into Indian territory in May 2020 and in June 2020, killed 20 Indian troops in hand to hand combat along their shared border in the Himalayas. M Safi, H Ellis-Petersen & H Davidson ‘Soldiers Fell to Their Deaths as India And China’s Troops Fought with Rocks: India Shocked by Himalayan Border Clash in which Unarmed Troops Fought in the Dark’ *The Guardian* (17 June 2020), accessed at <https://www.theguardian.com/world/2020/jun/17/shock-and-anger-in-india-after-worst-attack-on-china-border-in-decades>.

<sup>134</sup> These events follow several years of naval skirmishes with Philippine and Vietnamese forces in rocky outposts in the South China Sea – at least in part in an effort to claim the waters surrounding the islands so that Chinese fishing trawlers could farm the ocean unimpeded. These incursions have resulted in coordinated naval exercises by the US, Japan, the Philippines and other ASEAN members. J Johnson ‘U.S. Aircraft Carriers Hold Joint Drills after ASEAN Lambastes Beijing over South China Sea’ *The Japan Times* (29 June 2020), accessed at <https://www.japantimes.co.jp/news/2020/06/29/asia-pacific/us-aircraft-carriers-south-china-sea/#.XwDPfGzbiU>.

and Road Initiative make it abundantly clear that China may be a far less desirable option. Moreover, its consolidation of power over Hong Kong during the pandemic or its use of forced labour of 11 million Muslims in the Uighur Province to produce PPE under conditions of almost complete AI surveillance serve as a template for other authoritarian states.<sup>135</sup>

Which brings us finally to Africa. Contrary to what one might think, Africa is not the continent with the highest Gini coefficient. That dubious distinction belongs to South America – a legacy of Spain and Portugal’s repressive and extractive colonial rule up through the 19th century.<sup>136</sup>

The African continent has seen the rise and fall of empires from Carthage to Egypt to Benin to Aksum to Mali to Kongo to Ethiopia to Mapungubwe to Ghana to Great Zimbabwe. All were centralised and cephalous for stretches of time. However, the bulk of the continent did not enjoy much by way of independent states prior to modern colonisation. The majority of societies were either chiefly or acephalous. Acephalous or stateless societies enjoyed no centralisation of power: power was balanced between families. Disputes would be settled by the elders of the families. Many stateless societies were matrilineal, with heritage traced through the mother’s side of the family and the men marrying into the wife’s household. However, men usually were dominant and held positions of authority.<sup>137</sup>

Such organisation of societies throughout Africa, including southern Africa, predated European settlement and lived on after most of the colonisers had departed (or in a rare instance, even when they stayed on as cruel, racist, absolutist rulers). Acephalous societies tended to structure themselves along leadership hierarchies that ran from local chiefs to divisional chiefs to paramount chiefs. This truncated description possesses a familiar feel with respect to present-day South Africa and the manner in which a Western-style set of

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<sup>135</sup> W Jianmin “One Belt and One Road”, a Far-Reaching Initiative’ *China–US Focus* (26 March 2016), accessed at <https://www.chinausfocus.com/finance-economy/one-belt-and-one-road-far-reaching-initiative#:~:text=The%20%E2%80%9COne%20Belt%20and%20One,Asia%2C%20and%20China’s%20own%20situation.> R Ghiasy & J Zhou *The Silk Road Economic Belt: Considering Security Implications and EU–China Cooperation Prospects* (2017) 5:

[T]he government-affiliated *Blue Book of Non-Traditional Security (2014–15)* states [that the Silk Belt and Road Initiative] the BRI is expected to serve the interests of (a) ‘safeguarding China’s national economic security’; (b) promoting energy security through alternative shipping routes; (c) facilitating border security through development of China’s western regions; (d) combating the ‘three evils’ within and abroad through economic development and wealth redistribution; (e) helping to mitigate US-led geopolitical machinations; and (f) ‘[building] a new international system of discourse’ and a ‘new international security order’ that enhances China’s comprehensive national power and cultural soft power.

That’s hard power. Even its soft power is not so soft. Jianmin (2015) reflects how upwards of 65 countries and some two-thirds of the world’s population could be served by the Silk Belt and Road Initiative, a project that Ghiasy and Zhou note as aiming to: (a) expand and connect transport networks and markets; (b) disperse and improve Eurasian production capacity; and (c) facilitate the transit of goods, capital, energy, raw materials and – to some extent – information, people and culture.’

<sup>136</sup> LP de la Escosura ‘Inequality and Poverty in Latin America: A Long-Run Exploration’ in T Hatton, K O’Rourke & A Taylor *The New Comparative Economic History: Essays in Honor of Jeffrey G. Williamson* (2007) 291.

<sup>137</sup> ‘The History of State Formation in Africa’ *Global Security*, accessed at <https://www.globalsecurity.org/military/world/africa/history-state-formation.htm>.

political institutions co-exist with social arrangements that predate colonial rule, and which continue to provide the organising principles of everyday life.<sup>138</sup>

This pre-existence and co-existence of alternative social and political organisation has had significant consequences for Africa's path of development. The absence of centralised state authority contributed to the continent's position as follower behind the rest of the world 'in terms of technology, political development, and prosperity' and made it impossible to 'take advantage of the opportunities made available by the Industrial Revolution.'<sup>139</sup>

At the same time, Acemoglu and Robinson recognise that the absence of such development was, at least in part, due to the Atlantic slave trade from 1600 to 1800. African societies and kingdoms had had a long history of raiding neighbours in order to trade captured slaves – not merely being slaves – with the north and the east. Thus, while a number of kingdoms like that of the Kongo participated in and became wealthy from the sale of neighbouring Africans to European traders, the practice pre-dated the Atlantic slave trade.

With rare exception, Europeans seldom settled in Africa during the height of the slave trade. African polities rather easily beat back the Portuguese who originally scoured the coast on their way around the Cape of Good Hope to trade in the Far East (and destinations in between.) Mozambique remains a lonely reminder of those excursions.

The Dutch likewise showed little interest in the kind of settlement and extraction that marked Spanish and Portuguese incursions into South America. From the 16th century on, the Table Bay outpost served primarily as a replenishing point for trading ships sailing back and forth between Europe and Asia. Initially, foodstuffs (primarily meat) could be traded with the Khoi for copper, iron, beads and tobacco. Unable to establish sufficient broader trade relationships with neighbouring Khoi communities to sufficiently stock the port, the

<sup>138</sup> This author has never been convinced by the use of the cultural, ethical and epistemological norm of ubuntu as a substitute or a basis for large-scale political and economic institutional arrangements. Part epistemology and part ethics, ubuntu describes our obligations to others in terms of the need for solidarity and harmony. But ethics is not politics. They operate with different vectors and at different levels of scale. To fulfil one's ethical obligations, you need not concern yourself with nation-state structures, vertical relationships between the governed and governors, or more or less fair systems of distributive justice. That's the stuff of politics. Ethics concerns itself predominantly with what duties an individual owes to others. You can squeeze ethical systems hard to develop a theory of distributive justice: and when you do so, they all tend to conduce toward a form of democratic socialism. Singer's fairly demanding Utilitarianism does a lot of heavy lifting if we follow the following maxim: '[I]f it is in our power to prevent something bad from happening, without thereby sacrificing anything of comparable moral importance, we ought, morally, to do it.' P Singer 'Famine, Affluence and Morality' *Philosophy & Public Affairs* (1972). There's only a marginal difference between what can be done to improve the lot of others and what can be legitimately done to improve one's own well-being. Similarly, while Kant's own politics were essentially liberal in a formal sense, 20th century philosophers and jurists have used his categorial imperative and reliance on reason over custom to develop egalitarian theories of justice. None is better known than John Rawls' *A Theory of Justice* (1973). Again, the ethical norms of ubuntu that well-serve acephalous sub-Saharan communities are quite appealing to philosophers with a strong egalitarian bent or who wish to distinguish egalitarian African thought from its egalitarian European counterparts. D Cornell *Law and Revolution in South Africa: uBuntu, Dignity, and the Struggle for Constitutional Transformation* (2014); T Metz 'An African Egalitarianism: Bringing Community To Bear On Equality' in G Hull (ed) *The Equal Society: Essays on Equality in Theory and Practice* (2015) 185; M Ramose 'The Philosophy of uBuntu and uBuntu as a Philosophy' in M Ramose, *African Philosophy through Ubuntu* (1999) 50–65.

<sup>139</sup> D Acemoglu & J Robinson *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (2012) 115.

Dutch engaged in several wars with the Khoi designed to secure additional land so that they might supply their own ‘home-grown’ vegetables, fruit and meat to the passing ships.

This ‘small’ development – a critical juncture for South Africa – took on a life of its own. These recruits decided to stay and expand their operations. Aside from claiming land from the Khoi, the Boers employed slaves brought in from Madagascar, Mozambique, and Indonesia to build larger farms. Although they attempted to push north, persistent raids by the Khoi slowed their progress through most of the 18th century.

But the broader story of the continent’s downward trajectory after 1600 begins with the Atlantic slave trade. For the next 200 years, Europeans captured, or more regularly bought, slaves in such numbers that upwards of 50% of the African population on the continent disappeared.<sup>140</sup> The next period of depredation occurred after the Treaty of Berlin in 1885 carved up Africa amongst a handful of Western European nations, who then scrambled to take up largely temporary residence and exploit what existed of the continent’s abundant natural resources. This equally grim period lasted until the 1950s and 1960s for many African countries – and as Chapter IV details, until 1994 for South Africa. Critical junctures for Europe that had a positive valence had a perversely negative (and not at all unrelated) set of consequences for colonies qua countries on this continent:

[E]ven outside of areas such as Congo, Madagascar, Namibia, and Tanzania, the areas where plunder, mass disruption, and even whole-scale murder were the rule, there was little chance for Africa to change its institutional path. Even worse, the structures of colonial rule left Africa with a more complex and pernicious institutional legacy in the 1960s than at the start of the colonial period. The development of the political and economic institutions in many African colonies meant that rather than creating a critical juncture for improvements in their institutions, independence created an opening for unscrupulous leaders to take over and intensify the extraction [over which] ... European colonialists presided ... The political incentives these structures created led to a style of politics that reproduced the historical patterns of insecure and inefficient property rights under states with strong absolutist tendencies but [absent] ... centralized authority.<sup>141</sup>

As a result, four waves of industrial revolution have largely passed by most of the 54 nations in Africa, as states on the continent continue to endure vicious and persistent cycles of extractive political and economic institutions. Whether the nations on our continent can make up lost ground – and whether South Africa, in particular, can do so – are questions taken up in Chapters IV and V.<sup>142</sup>

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<sup>140</sup> P Manning *Slavery and African Life: Occidental, Oriental, and African Slave Trades* (1990).

<sup>141</sup> D Acemoglu & J Robinson *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (2012)115.

<sup>142</sup> ‘Most’ African nations clearly does not mean ‘all’. Botswana would seem to be an exception – though at 2.2 million people in a sparsely populated country it may seem a rather small exception. However, because paths of development are so very contingent, insights as to what served one country may provide important lessons for other similarly situated countries. As Acemoglu and Robinson write:

In the nineteenth century, King Khama, the grandfather of Botswana’s first prime minister at independence, Seretse Khama, initiated institutional changes to modernize the political and economic institutions of his tribe. Quite uniquely, these changes were not destroyed in the colonial period, partly as a consequence of Khama’s and other chiefs’ clever challenges to colonial authority. Their interplay with the critical juncture that independence from colonial rule created laid the foundations for Botswana’s economic and political success. It was another case of small historical differences mattering.

### C. Alternative Definitions of Wicked Problems or Mistakes in Nomenclature?

Some social scientists believe so-called ‘wicked problems’ are mere problems of collective action hiding behind scary nomenclature. They also contend that the term has been used rather ‘indiscriminately’.<sup>143</sup> Alford and Head claim that this tendency to ‘totalise’ problems – and turn them into ‘intractable masses of complexity’ overlooks concrete solutions to challenges that are less wicked – or more one-dimensionally wicked – than they might initially appear.<sup>144</sup> Put slightly differently, Rittel and Webber’s one-size-fits-all model fails to discriminate adequately between wicked problems relatively susceptible to successful policy interventions and those that truly remain beyond our ken:

[I]t may be that a generic concept of wicked problems has prevailed, even though the range of concrete situations to which it has been attached vary in ways that stretch that concept. Moreover, this generic concept has, in turn, given rise to a ‘one best way’ to tackle problems ... potentially creating a mismatch between the proposed solutions and specific wicked problem situations. The net result has been a proclivity to cast many problems as more wicked than they actually are.<sup>145</sup>

According to Alford and Head’s typology, all of the literature’s so-called wicked problems run along two axes: the *x*-axis reflects the increasing complexity of problems; the *y*-axis reflects the increasing difficulty of stakeholder and institutional relationships.<sup>146</sup> The result of this reconfiguration of problems that possess at least some elements found in Rittel and Webber’s decalogue is a matrix of nine different cells. The first troika in the matrix captures easy problems, analytically complex problems and communicatively complex problems. The second cohort of tribulations encompasses generic complex problems, cognitively complex problems and politically complex problems. The final difficult clutch of conundrums embraces conceptually contentious problems, politically turbulent problems and very wicked problems. According to Alford and Head, this disaggregation of the standard wicked problem template should make it easier for policymakers and various kinds of scientists and analysts to identify and to solve pressing social problems. After all, only one of the nine boxes along the two axes qualifies as a truly wicked problem.

It’s intriguing to be told that we have oversold the notion of wicked problems until we find ourselves confronted with what Alford and Head consider to be a truly wicked problem: drug addiction, its inherent attraction for criminal syndicates and worldwide trafficking. It’s a perplexing choice. First, it eschews grappling with far more dangerous

<sup>143</sup> J Alford & B Head ‘Wicked and Less Wicked Problems: A Typology and Contingency Framework’ (2017) 36 *Policy and Society* 397.

<sup>144</sup> *ibid.*

<sup>145</sup> *ibid.* at 398. For examples of work said to rely on Rittel and Webber’s one size fits all model, see K Levin, B Cashore, S Bernstein & G Auld ‘Overcoming The Tragedy of Super Wicked Problems: Constraining Our Future Selves to Ameliorate Global Climate Change, (2012) 42 *Policy Sciences* 125; S Dawes, A Cresswell, & T Pardo ‘From “Need to Know” to “Need to Share”: Tangled Problems, Information Boundaries, and the Building of Public Sector Knowledge Networks’ (2009) 69 *Public Administration Review* 392; R Durant & J Legge ‘“Wicked Problems”, Public Policy, and Administrative Theory: Lessons from the GM food Regulatory Arena’ (2006) 38 *Administration & Society* 309; W Kreuter, C De Rosa, C Howze, & G Baldwin ‘Understanding Wicked Problems: A Key to Advancing Environmental Health Promotion’ (2004) 31 *Health Education and Behavior* 441.

<sup>146</sup> J Alford & B Head ‘Wicked and Less Wicked Problems: A Typology and Contingency Framework’ (2017) 36 *Policy and Society* 397, 402. 402.

problems confronting humanity: nuclear weapons, climate change, global pandemics, permanent technological unemployment, the political acid bath of social media, the rollback of democracy, the fragmentation of the nation-state, and the failure of multilateral and multinational political and economic institutions. At least another five far more mundane – and generally domestic – quandaries fit into Alford and Head’s box of ‘worst-case scenario’ wicked problems. Second, drug treatment courts and facilities had, at the time of Alford and Head’s analysis, already proven to be highly successful for two reasons: one, because of the polycentric manner in which specialised courts can treat individuals, and, two, by diminishing incarceration for drug felonies and limiting recidivism.<sup>147</sup> Third, the legalisation and the regulation of the sale of marijuana further demonstrates how one might go about limiting the pernicious social effects of criminal syndicates. Finally, most states have concluded that the costs of incarceration are not worth the social costs of relatively benign controlled substances. Not such a wicked problem, it would seem.

If that’s the best we can do at penetrating the Rittel and Webber decalogue, then there’s both no reason to depart from the standard model and no reason to think that we might gain some traction, through collective action, on wicked problems. However, two other authors have recently offered a more focused analysis of one component of the decalogue – evaluation – and suggested that a bottom-up, more granular means of ‘evaluation’ of smaller-scale successes might render us less prone to the political paralysis that’s quite rightly associated with contemporary analysis of wicked problems.<sup>148</sup> Termeer and Dewulf

<sup>147</sup> S Woolman *The Selfless Constitution: Experimentalism and Flourishing as Foundations of South Africa’s Basic Law* (2013) 236–239; M Dorf & C Sabel ‘Drug Treatment Courts and Emergent Experimental Governance’ (2000) 53 *Vanderbilt Law Review* 831.

<sup>148</sup> C Termeer & A Dewulf ‘A Small Win Framework to Overcome the Evaluation Paradox of Governing Wicked Problems’ (2018) *Policy and Society* 1. Termeer and Dewulf’s primary contribution is their attempt to diminish engagement with or avoidance of Rittel and Webber’s Evaluation Paradox. They write, importantly, as follows:

[T]ackling wicked problems not only challenges the design of governance systems and strategies, but also poses challenges for alternative methods of evaluation. Strikingly, many wicked problem analysts circumvent the evaluation question or are very cautious in their assessment of policies by referring to the intractability and indefinability of wicked problems ... This paper embraces this challenge by addressing what we call the evaluation paradox of wicked problems. On the one hand, wicked problems have no stopping rule, implying that it is not clear when the problem has been dealt with satisfactorily – one can always do more and better [according to Rittel and Webber] – on the other hand, policy actors need to judge their strategies in order to improve them and to account for them towards a variety of audiences. Uneasiness with, or unawareness of, this evaluation paradox may increase the risk of two unproductive responses that are very familiar for wicked problems: paralysis and overestimation. Paralysis occurs when people experience or define the wickedness as so overwhelming that it discourages them and prevents them from doing anything about it ... Evaluating policy strategies for wicked problems in similar ways as for other problems can easily result in highlighting negative outcomes such as policy delays, increasing costs or policy failure. This may reinforce paralysis: ‘it confirms what we already thought ... there is nothing we can do about this problem anyway’ is a commonly heard view. Overestimation is the belief that wicked problems can actually be solved, implying a focus on one aspect or a single standpoint.

On intractability, see D Duckett, D Feliciano, J Martin-Ortega, & J Munoz-Rojas ‘Tackling Wicked Environmental Problems: The Discourse and its Influence on Praxis in Scotland’ (2016) 154 *Landscape and Urban Planning* 44. On paralysis, see K Levin, B Cashore, S Bernstein & G Auld ‘Overcoming the Tragedy of Super Wicked Problems: Constraining our FutureSelves to aMeliorate Global Climate Change’ (2012) 45 *Policy Sciences* 123. On overestimation, see E Roe ‘Policy Messes and Their Management’ (2016) 49(4) *Policy Sciences* 351. See also C Termeer, A Dewulf & G Breeman ‘Governance Capabilities for

contend that we should first identify and concentrate on ‘small wins’ and then, secondly, create the right policy and legal architecture for recognition, collection and dissemination of how small wins work. In so doing, we would produce an array of feedback mechanisms – for various small-scale problems susceptible to small wins – that are both lateral looking and forward looking and that enhance the likelihood of solutions to particular problems by the right actors collaborating at the right levels to produce small wins. Moreover, success would breed success. Various social and political actors would increasingly buy into this process and build upon prior achievements. So Termeer and Dewulf’s theory goes. There’s much to recommend it. But it’s not especially new. Having previously authored a work on the virtue of small wins, I doubt that this model can take on the challenges engaged in these pages.

The basic themes of Termeer and Dewulf’s work have been a central feature of experimental governance, choice architecture, behavioural economics, empirical philosophy and neuroscience for quite some time. As I wrote several years ago:

When we contemplate such matters as consciousness or constitutional democracy, we find that these domains are best described in terms of (a) trial and error and feedback mechanisms that give us fresh opportunities to reflect upon experience ... and to imagine more or less optimal courses for action ... to realize the ends and the aspirations (b) that have largely, but not irrevocably, already made us who we are ... Studies of consciousness ultimately identify our neural structures as designed for trial and error. [The many selves that make up a corporeal individual] ... are always experimenting, attempting to divine, through reflection (memory) and action (imagination), what ‘works’ best. Choice architects, those persons charged with constructing environments that create greater health, wealth and happiness for their communities, regularly run experiments that attempt to (1) eliminate biases, (2) draw on the (adaptive) preferences of a representative cohort of individuals, and ultimately, (3) deliver policies that nudge people away from negative defaults toward more optimal ends ... A constitutional democracy, made up of millions of complex, heterogeneous individuals, constantly strives, through policy, legislation, common law, customary law and ultimately the provisions of its basic law, to determine what works best for most of its many constituents. Because our Constitution states some ... of the norms that govern our lives at an extremely high level of generality, it remains for citizens and their representatives to create doctrines and institutions that serve those capacious framed ends best [through various democratic institutions and processes.] The truly interesting feature of this political theory ... is that these rolling best practices – bounded by a basic law order committed to flourishing and, thus, to the development and the expansion of our individual capabilities – do not merely serve the preordained ends of South Africa’s denizens. Our reflexive stance toward ... rolling best practices will invariably cause us, over time, to alter the content of the fundamental norms that bind us.<sup>149</sup>

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Dealing Wisely with Wicked Problems’ (2015) 47 *Administration & Society* 680. The article’s emphasis on reflexivity, resilience, responsiveness and revitalization parallels the pre-existing literature on experimental governance and experimental constitutionalism. The problem with this approach, in so far as wicked problems are concerned, is that it concentrates on participatory bubbles at the lowest possible level of governance, and the knowledge that accrues through being lateral and backward looking to see how other communities address similar problems – borrowing what they deem useful and discarding what they don’t. Such luxuries of experimenting over time and space have far less purchase over meeting one-shot challenges.

<sup>149</sup> S Woolman *The Selfless Constitution: Experimentalism and Flourishing as Foundations of South Africa’s Basic Law* (2013) 4.

However, this set of theses addressed endogenous blockages within South Africa's constitutional democratic order. In Termeer and Dewulf's view, small win after small win should deliver the egalitarian pluralist polity to which the South African Constitution aspires. But are small wins enough for a polity beset by both a surfeit of seemingly intractable domestic problems and a host of global wicked problems? Seven years later, my answer to my younger, more optimistic self, and thus to Termeer and Dewulf, is 'no'. In addition, Termeer and Dewulf fail to provide a compelling answer as to how humanity as a whole is to come to grips with global problems in the absence of global political and economic institutions capable of resolving such problems.

#### D. How Wicked Problems Reinforce and Accelerate One Another

Small wins tend to ignore central features of most wicked problems. First, small wins with respect to one wicked problem may 'not only prove of limited usefulness to the solution to another wicked problem'; a commitment to small wins may also fail to take adequate account of how 'one wicked problem might actually be a function of another wicked problem; or worse still, how wicked problems of different kinds might actually reinforce one another.'<sup>150</sup> Second, the manner in which wicked problems are addressed – say, in the form of a social movement – may not prove decisive or fast enough to solve the problem in question. By the time everyone agrees and acts accordingly and constructively, the damage may already be done. As we shall see in the discussion on climate change, solutions to wicked problems (especially super-wicked problems) may 'require one shot rather than allow for lots of trial and error'<sup>151</sup> and feedback. Finally, lawmakers and 'policymakers have no margin for error given the gravity of the wicked problem as well as the possibility of severe unintended negative consequences that might flow from their proposed solutions.'<sup>152</sup> That's all rather a bit abstract. This book, while focused on permanent technological unemployment operates in the shadow of a number of, and in concert with, other increasingly wicked problems: pandemics, climate change, nuclear proliferation, rollbacks in fully inclusive democracy and the weakening of multilateralism and multinational institutions.

Only fully inclusive democracies possess the requisite stores of social, political, economic and emotional capital not only to recognise the dignity and the capabilities of fellow citizens, but also to see the same in non-citizens spread out across the globe. But that would mean only a fragment of the world's population – say 300 million out of eight billion – have the resources and the will to tackle the aforementioned crises. In short, coming back to Chapter II's three kinds of problems of collective action, only a small percentage of nations possess the ability to work at a meta-national level – collaboratively – to solve truly wicked problems. Examples. One. Not one nuclear power or aspirant nuclear power counts as a full democracy. How then to solve the problem of nuclear proliferation? Mutually assured destruction – always a deadly policy in the age of two superpowers – becomes utterly unworkable when spread across a world without enforceable disarmament treaties and a time when these powers are actually in conflict with one another. Two. The COVID-19 pandemic has also shown humanity for what it has become. To contain transmission, we

<sup>150</sup> H Rittel & M Webber 'Dilemmas in a General Theory of Planning' (1973) 4 *Policy Sciences* 155, 165.

<sup>151</sup> *ibid.* at 163.

<sup>152</sup> *ibid.* at 166–167.

have closed our borders. We will only open them up – fully – when we have a grip on the pandemic through vaccines or various treatment modalities. If and when.

Wishing for greater piety and collaboration amongst the world's nations – especially the most powerful – is just that, wishing. Thus, even if South Africans could reclaim their commitment to democratic reconstitution and make good the promise of substantive emancipation, they would remain confronted by a host of exogenous problems that small endogenous wins cannot meaningfully alter.

But let's pull back our lens again so that we have a view of how the full panoply of wicked problems undercuts the solution of any one wicked problem. For example, the US National Intelligence Council (NIC) *Paradox of Progress* Report of 2017 presciently identifies tensions rising between states from 2018 through 2023, and the real possibility of rapid decline into authoritarian rule in long-standing constitutional democracies:

Global growth will slow, just as increasingly complex global challenges impend. An ever-widening range of states, organizations, and empowered individuals will shape geopolitics ... [For the] worse, the emerging global landscape is drawing to a close ... [along with] the rules-based international order that emerged after World War II. It will be much harder to cooperate internationally and govern in ways publics expect. Veto players will threaten to block collaboration at every turn, while information 'echo chambers' will reinforce countless competing realities, undermining shared understandings of world events. Underlying this crisis in cooperation will be local, national, and international differences about the proper role of government across an array of issues ranging from the economy to the environment, religion, security, and the rights of individuals. Debates over moral boundaries – to whom is owed what – will become more pronounced, while divergence in values and interests among states will threaten international security. It will be tempting [for the United States, NATO and other democratic nations] to impose order on this apparent chaos, but that ultimately would be too costly in the short run and would fail in the long. Dominating empowered, proliferating actors in multiple domains would require unacceptable resources in an era of slow growth, fiscal limits, and debt burdens. Doing so domestically [in the United States] would be the end of democracy, resulting in authoritarianism or instability or both.<sup>153</sup>

Notice how virtually every wicked problem in my decalogue features in this NIC analysis. (The report is based upon interviews with 2 500 experts in 35 countries.) 'Global growth will slow' due to breakdowns in multilateral institutions, tariffs wars incited by nativist domestic politics and automation and AI-driven technology that will eliminate jobs whilst generating income for 'empowered individuals' who run large corporations (Apple, Microsoft, Amazon, Google) or national-socialist states (Xi Ping's China). 'Veto players will threaten to block collaboration at every turn, while information "echo chambers" will reinforce countless competing realities, undermining shared understandings of world events' – thus making agreement on nuclear proliferation virtually impossible internationally, fuelling the deleterious effects of regional conflicts where both medium-sized powers and superpowers look to extend their influence, and encouraging civil wars where existing states cannot control ethnic or religious insurgencies.<sup>154</sup> A 2013 NIC report contemplated the

<sup>153</sup> 'The Paradox of Progress: The Future Summarized' *Office of the Director of National Intelligence* (2017), accessed at <https://www.dni.gov/index.php/global-trends/the-future-summarized>.

<sup>154</sup> Such insurrections may come about due to a sense of responsibility to protect ethnic values. 'Logic of Ethnic Responsibility and Pro-Government Mobilisation in East Ukraine Conflict' (2019) 52(8) *Comparative Political Studies* 1200. However, the conditions favouring insurgencies may be far more contingent upon

frightening possibility of a non-state world.<sup>155</sup> That same report – consistent with a prior 2007 CIA report – predicted what has happened with respect to climate change in the Western Cape, the Eastern Cape and Limpopo:

Demand for food, water, and energy will grow by approximately 35, 40, and 50 percent respectively owing to an increase in the global population and the consumption patterns of an expanding middle class. Climate change will worsen the outlook for the availability of these critical resources. Climate change analysis suggests that the severity of existing weather patterns will intensify, with wet areas getting wetter and dry and arid areas becoming more so. Much of the decline in precipitation will occur in the Middle East and northern Africa as well as western Central Asia, southern Europe, southern Africa, and the US Southwest ... Agricultural productivity in Africa, particularly, will require a sea change to avoid shortages. Unlike Asia and South America, which have achieved significant improvements in agricultural production per capita, *Africa has only recently returned to 1970s' levels.*<sup>156</sup>

As we shall see, not only has Cape Town previously experienced the highest level of water restrictions – just below turning off the taps – but the agricultural sector, a major part of the Western Cape economy, contracted by 24% in the first quarter of 2018.<sup>157</sup> That near catastrophe played a significant role in a negative GDP of -2.6% in Q1 and a negative GDP of -0.7% in Q2 of 2018 and, thus, by definition, brought on a recession.<sup>158</sup> The ongoing apocalypse next door in the Eastern Cape began when Day Zero actually hit substantial portions of the province in 2018 and left hundreds of thousands without water, destroyed the subsistence farming upon which many historically disadvantaged communities rely and placed half of the country's citrus production at risk. Water outages in the Eastern Cape and Nelson Mandela Bay occurred for weeks at a time in 2020 – a function of climate change, a failure of governance and an absence of skilled engineers to fix systemic breakdowns.

Technological disruption – from social media to increased automation – has played a significant role in the rise of fascist and populist parties and autocratic rulers, and thus the rollback of democracy and stable domestic and international institutions.<sup>159</sup> The NCI *Paradox in Progress* report notes that technological disruption due to increased automation will increase the disparity in wealth between rich and poor unless new social contracts are drawn up. However, the growing concentration of power in the hands of politicians, or individuals, or firms, with control over new technologies, allows them to influence heavily

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poverty, political instability, rough terrain and large populations, than ethnicity or religion. J Fearon & D Laitin 'Ethnicity, Insurgency and Civil War' (2003) 97(1) *American Political Science Review* 75.

<sup>155</sup> National Intelligence Council *Global Trends 2030: Alternative Worlds* (2012) 128–133, accessed at [https://www.dni.gov/files/documents/GlobalTrends\\_2030.pdf](https://www.dni.gov/files/documents/GlobalTrends_2030.pdf).

<sup>156</sup> *ibid.* at iv. (Emphasis added)

<sup>157</sup> 'Economy disappoints in Q1 2018, contracting by 2.2%' *StatsSA* (5 June 2018), accessed at <http://www.statssa.gov.za/?p=11202>.

<sup>158</sup> 'The Economy Shrinks by 0.7% in Q2: 2018' *StatsSA* (4 September 2018), accessed at <http://www.statssa.gov.za/?p=11507>.

<sup>159</sup> Social media has been used to prop up authoritarian regimes, but also help topple them. This suggests that it is a tool that can be used by any side, but more than that, it suggests that social media provides a platform for those with radical ideas, who may be excluded from the traditional media. J Tucker, Y Theocharis, M Roberts & P Barbéra 'From Liberation to Turmoil: Social Media and Democracy' (2017) 28(4) *Journal of Democracy* 46. Further, automation – and the economic changes it brings – has been identified as a factor leading to the rise of populism that is being seen the world over. K Roth 'Human Rights in the Age of Trump' (2018) 228 *Foreign Policy* 6.

political processes (through distortions created by social media platforms) and to block efforts at redistribution of wealth by the state.<sup>160</sup>

The loss of our privacy and the acceleration of inequality due to a combination of automation and social media have been flashing red for some time.<sup>161</sup> However, the totalitarian dangers of human-assisted AI programmes have not even remained in hiding. As has been repeatedly noted, China currently employs sophisticated programmes, with labellers and technicians, to track every action, to repress and to ‘re-educate’ millions of Uighur Muslims in western China – while also using them as forced labour for COVID-19 specific protective equipment. It’s a field leader in this form of AI. It pays people slave wages to build their own prisons<sup>162</sup> and sells the technology to every interested autocratic regime on the planet. Orwell’s dystopia has been made chillingly real. Russia uses artificial intelligence to interfere in elections all the way from the Ukraine to the United States to

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<sup>160</sup> W Brady, J Wills, D Burkart, J Jost & J Van Bavel ‘An Ideological Asymmetry in The Diffusion of Moralised Content on Social Media Among Political Leaders’ (2019) 148(10) *Journal of Experimental Psychology: General* 1802; W Hall, R Tinati & W Jennings ‘From Brexit to Trump: Social Media’s Role in Democracy’ (2018) 51(1) *Computer* 18.

<sup>161</sup> J Lanier *Ten Reasons to Delete Your Social Media Accounts Right Now* (2018): Lanier contends that most of us have sold our souls – our dignity, our privacy, our conscience, our beliefs and our right to associate – for nothing. Instead, these rights have been repeatedly violated by those to whom you have willingly handed over your birthright. *Bernstein & Others v Bester NO & Others* 1996 (2) SA 751, (CC), 1996 (4) BCLR 449 (CC) at para 67. J Ackermann quotes, with approval, the Council of Europe’s gloss on the right to privacy: [The right to privacy] consists essentially in the right to live one’s own life with a minimum of interference. It concerns private, family and home life, physical and moral integrity, honour and reputation, avoidance of being placed in a false light, non-revelation of irrelevant and embarrassing facts, unauthorised publication of private photographs, protection from disclosure of information, given or received by the individual confidentially.

See also *Investigating Directorate: Serious Economic Offences v Hyundai Motor Distributors (Pty) Ltd: In re Hyundai Motor Distributors (Pty) Ltd v Smit* NO 2001 (1) SA 545 (CC), 2000 (10) BCLR 1079 (CC) at para 18. The right to privacy protects intimate space because such a space is a prerequisite for human dignity, and thus flourishing.

<sup>162</sup> C Buckley & P Mozur ‘How China Uses High-Tech Surveillance to Subdue Minorities’ *The New York Times* (22 May 2019), accessed at <https://www.nytimes.com/2019/05/22/world/asia/china-surveillance-xinjiang.html>:

At the click of a mouse, a technician explained, the police can pull up live video from any surveillance camera or take a closer look at anyone passing through one of the thousands of checkpoints in the city. To demonstrate, she showed how the system could retrieve the photo, home address and official identification number of a woman who had been stopped at a checkpoint on a major highway. The system sifted through billions of records, then displayed details of her education, family ties, links to an earlier case and recent visits to a hotel and an internet cafe. The simulation, presented at an industry fair in China, offered a rare look at a system that now peers into nearly every corner of Xinjiang, the troubled region where Kashgar is located. This is the vision of high-tech surveillance – precise, all-seeing, infallible – that China’s leaders are investing billions of dollars in every year, making Xinjiang an incubator for increasingly intrusive policing systems that could spread across the country and beyond. Developed and sold by the China Electronics Technology Corporation, a state-run defense manufacturer, the system in Kashgar is on the cutting edge of what has become a flourishing new market for technology that the government can use to monitor and subdue millions of Uighurs and members of other Muslim ethnic groups in Xinjiang.

Madagascar.<sup>163</sup> India uses AI as part of its nationalist repression of Muslims in Kashmir.<sup>164</sup> The Republican Party in the United States invites both foreign and domestic distortions of the electoral process designed to ensure its hold on power at the federal and state level.

Imagine rolling China's surveillance system out for 1.4 billion people, or for that matter, seven to eight billion people. Facebook, and its related products, WhatsApp and Instagram, already capture data on four billion users.<sup>165</sup> As Jaron Lanier has made patently clear, Big Tech has robbed us of our privacy and our economic dignity, while greatly diminishing our ability to treat others with equal concern and respect and our capacity for arriving at a collective consensus on important political and social issues.<sup>166</sup> Fortunately, despite their ability to capture some political elites, firms such as Facebook, Amazon, Apple and Microsoft are still subject to long-standing bodies of domestic law. As of December 2020, the US Federal Trade Commission and 46 of 50 state attorneys-general found that Facebook – along with WhatsApp and Instagram – violated the antitrust laws of the United States. The European Union has already begun to tackle these tech giants and has recently rebuffed China's use of Huawei products to track data of private persons and public institutions.

## E. Wicked Problem 1 – Nuclear Weapons in Non-Cooperative Non-Multilateral Environment

### *Letting the genie out of the bottle*

At the top of the list, we ought to find nuclear weapons. It's been over 75 years since they were used in actual warfare. That's an astonishingly long time given their lethal nature, the public availability of the knowledge required for their production, the access to the materials necessary for their construction and the general failure of human beings to cabin the use of any weapon at their disposal. Two years after their first use in war, a concerned physicist created a Doomsday Clock. The clock operates as an extended metaphor for the

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<sup>163</sup> M Schwirtz & G Borgia 'How Russia Meddles Abroad for Profit: Cash, Trolls and a Cult Leader' *The New York Times* (11 November 2019), accessed at <https://www.nytimes.com/2019/11/11/world/africa/russia-madagascar-election.html>.

<sup>164</sup> A Zia 'The Haunting Specter of Hindu Ethnonationalist-Neocolonial Development in the Indian Occupied Kashmir' (2020) 63 *Development* 60.

<sup>165</sup> As this book went to bed a month after Biden's victory in the 2020 elections, the Federal Trade Commission and the Attorneys Generals of 46 (of 50) states initiated antitrust litigation against Facebook for its control of large swaths of social media through its ownership of Facebook, WhatsApp and Instagram. B Kendall & J McKinnon 'Facebook Hit With Antitrust Lawsuits by FTC, State Attorneys General' *Wall Street Journal* (9 December 2020), accessed at <https://www.wsj.com/articles/facebook-hit-with-antitrust-lawsuit-by-federal-trade-commission-state-attorneys-general-11607543139>.

<sup>166</sup> J Lanier *Ten Arguments For Deleting Your Social Media Accounts Right Now* (2018).

statistical likelihood of their use in warfare.<sup>167</sup> The clock set the outside limit (midnight).<sup>168</sup>

According to many physicists and policy experts, recent events have edged us to one minute and forty seconds before midnight. Nuclear powers are now in open conflict with one another. India's decision to scrap Article 370 with respect to the special status of the Kashmir opened up direct conflict with Pakistan.<sup>169</sup> That action revived long-standing hostilities between China and India, given India's new claim on the Ladakh region and

<sup>167</sup> K Benedict 'Doomsday Clockwork' *The Bulletin of Atomic Scientists* (26 January 2017):

The Doomsday Clock [created in 1947] is a design that warns the public about how close we are to destroying our world with dangerous technologies of our own making. It is merely a metaphor, a reminder of the perils we must address if we are to survive on the planet.

Initially, set at seven minutes to midnight, the hands were reset at three minutes to midnight in 1953 after the United States and the Soviet Union detonated thermonuclear weapons. 'In 1991, with the end of the Cold War, the United States and the Soviet Union signed the Strategic Arms Reduction Treaty.' The treaty's deep cuts in nuclear weapons arsenals led the board of the *Bulletin* to move back the clock hand to 17 minutes to midnight. Recent events – in North Korea, Iran and Pakistan – have led the clock to be moved to 2.5 minutes to midnight (the 17th time the clock has been reset). 'The board is made up of scientists and other experts with deep knowledge of nuclear technology and climate science, who often provide expert advice to governments and international agencies.' As noted above, the advance in accuracy of climate science, and the dangers posed by climate change and natural resource scarcity, have also led the board to consider just how close to midnight we are.

<sup>168</sup> It continues to take into account near misses or accidents that might occur due to asymmetries in information. The Cuban Missile Crisis reflects the best-known instance of such asymmetries. Two kinds of asymmetry exist. One refers to knowledge possessed by each side during the standoff in October 1962. The second refers to knowledge of the actual difference in power wielded by United States and the Soviet Union in terms of a nuclear threat to the other side. The first asymmetry in the Cuban Missile Crisis turned on the lack of unawareness on the part of US officials that the Soviet general and the Soviet admiral in command had the greenlight to use tactical nuclear weapons (without express authorisation from Moscow) should the United States choose to invade Cuba. Kennedy's hard-line could only occur because Khrushchev knew the risks of actions that would precipitate both an invasion and a nuclear response – and then a nuclear war. In addition, only the presence of an admiral on a Soviet submarine prevented the launch of torpedoes against a US naval vessel that unwittingly passed close above. By standing down, the Soviet admiral averted initiating a chain of events that might have led to mutual aggression that would have precipitated a nuclear war. P Nash *The Other Missiles of October* (1997). Of course, the greater asymmetry lay in the nuclear superiority of the United States to the Soviet Union. Kennedy had lied wilfully to the American public during the presidential campaign of 1960. He asserted that President Eisenhower, and his opponent President Nixon, had allowed a missile gap to increase between the two nations that placed US security at risk. The opposite was true: the ratio of US to USSR missiles possessed stood at 9:1, the US possessed superior technology and, finally, the US had a notable strategic advantage in terms of the placement of weapons within easy striking distance of the Soviet Union. S Stern *The Cuban Missile Crisis in American Memory: Myths versus Reality* (2012). US placement of weapons in Turkey, directly on the USSR's border, and its clear intent to overthrow Castro's communist Cuban government had left Khrushchev little choice but to place missiles 90 miles from Florida. This event alone gives the lie to the notion that MAD – mutually assured destruction – kept either side from initiating a war to end all wars. It also offers an insight regarding the limits of knowledge about what other parties with nuclear weapons (or nuclear ambitions) can or might do, and the potentially disastrous mistakes that will likely issue from a toxic mix of hubris, idiocy and venality. Without any romance about the nation-state, how much more difficult is it to keep the genie in the bottle when parties no longer wield political power on stable sovereign soil, or the control of extant nuclear stockpiles becomes more challenging when nation-states fragment. For a comprehensive list of near misses, see Union of Concerned Scientists *I Wish I Didn't Know That: Real Life Tales of Close Calls, Screwups, and Nuclear Near Misses* (2017), accessed at <http://www.ucsusa.org/nuclear-weapons/close-calls#.Wiwq0NKnGM8>.

<sup>169</sup> 'Article 370: What Happened with Kashmir and Why It Matters' *BBC News* (6 August 2019), accessed at <https://www.bbc.com/news/world-asia-india-49234708>.

land which Pakistan gave to China in 1963.<sup>170</sup> These two powers have now had skirmishes over this desolate region in the Himalayas. China and the United States have gone from trade and tech warfare to duelling military exercises in the South China Sea.<sup>171</sup> North Korea and the United States failed ‘diplomatic efforts’ have only emboldened the former to build better ballistic missiles. The withdrawal of the United States from the multilateral agreement designed to slow Iran’s development of nuclear weapons has only made Iran’s neighbours and Europe nervous.<sup>172</sup> The decision pushed another nuclear power, Israel, into the more hawkish mode its nationalist leaders’ desire. And to prove the nostrum that ‘the enemy of my enemy is my friend’, the United Arab Emirates, Bahrain and Israel recently reached an agreement that results in full mutual diplomatic recognition – in return for a suite of technological exchanges and economic collaboration, and, most importantly, Israel’s withdrawal from illegal plans for further annexation of the West Bank.<sup>173</sup> Make no mistake – the agreement turns entirely on the enmity between the Sunni Arab world and Shiite Iran. The US withdrawal from the Intermediate-Range Nuclear Forces Treaty on 2 August 2019 led Russia to do so the next day.<sup>174</sup>

The United States pulling out of the Paris Accord – and the security risks that climate change entails – also caused clockminders to wind it down ever closer to midnight. Of

<sup>170</sup> K Campbell & M Rapp-Hooper ‘China Is Done Biding Its Time: The End of Beijing’s Foreign Policy Restraint?’ *Foreign Affairs* (15 July 2020), accessed at [https://www.foreignaffairs.com/articles/china/2020-07-15/china-done-biding-its-time?utm\\_](https://www.foreignaffairs.com/articles/china/2020-07-15/china-done-biding-its-time?utm_); A Joshi ‘India Has Handed China a Way to Interfere in Kashmir’ *Foreign Policy* (6 June 2020), accessed at <https://foreignpolicy.com/2020/06/16/china-kashmir-himalayas-pakistan-conflict/>; S Tharoor ‘China’s “Peaceful Rise” Vanishes in Thin Air’ *Project Syndicate* (8 June 2020), accessed at [https://www.project-syndicate.org/commentary/china-india-border-conflict-2020-by-shashi-tharoor-2020-06?utm\\_](https://www.project-syndicate.org/commentary/china-india-border-conflict-2020-by-shashi-tharoor-2020-06?utm_).

<sup>171</sup> M Beckley & H Brands ‘Competition With China Could Be Short and Sharp: The Risk of War Is Greatest in the Next Decade’ *Foreign Affairs* (17 December 2020), accessed at [https://www.foreignaffairs.com/articles/united-states/2020-12-17/competition-china-could-be-short-and-sharp?utm\\_medium=newsletters&utm\\_source=fatoday&utm\\_](https://www.foreignaffairs.com/articles/united-states/2020-12-17/competition-china-could-be-short-and-sharp?utm_medium=newsletters&utm_source=fatoday&utm_)

[H]istory and China’s recent trajectory suggest that the moment of maximum danger is just a few years away. China has entered a particularly perilous period as a rising power: it has gained the capability to disrupt the existing order, but its window to act may be narrowing. The balance of power has been shifting in Beijing’s favor in important areas of U.S.-Chinese competition, such as the Taiwan Strait and the struggle over global telecommunications networks. Yet China is also facing a pronounced economic slowdown and a growing international backlash. The good news for the United States is that over the long term, competition with China may prove more manageable than many pessimists believe. Americans may one day look back on China the way they now view the Soviet Union – as a dangerous rival whose evident strengths concealed stagnation and vulnerability. The bad news is that over the next five to ten years, the pace of Sino-American rivalry will be torrid, and the prospect of war frighteningly real, as Beijing becomes tempted to lunge for geopolitical gain. The United States still needs a long-term strategy for protracted competition. But first it needs a near-term strategy for navigating the danger zone.

<sup>172</sup> D Schwammenthal ‘Europe, the US and the Iran Deal: The Need to Resolve Transatlantic Disagreements’ (2018) 17 *European View* 218, accessed at <https://doi.org/10.1177/1781685818808713>.

<sup>173</sup> P Baker, I Kershner, D Kirkpatrick & R Bergman ‘Israel and United Arab Emirates Strike Major Diplomatic Agreement’ *The New York Times* (13 August 2020), accessed at <https://www.nytimes.com/2020/08/13/us/politics/trump-israel-united-arab-emirates-uae.html>.

<sup>174</sup> G Neuneck ‘The Deep Crisis of Nuclear Arms Control and Disarmament: The State of Play and the Challenges’ (2019) 2 *Journal for Peace and Nuclear Disarmament* 431, accessed at <https://www.tandfonline.com/doi/full/10.1080/25751654.2019.1701796>.

course, given the election of Joseph Biden as President of the United States in 2020, we would expect that various forms of multilateralism and global institutions will regain some of their prior force, and that at least some of these interconnected conflicts will be reversed. As I suggested at the outset of this chapter: only if we can overcome some pressing domestic problems of collective action, do we stand some chance of addressing a range of global crises successfully. The COVID-19 pandemic has already functioned as an accelerant, as opposed to a turning point, with respect to international polarisation and discord.<sup>175</sup> The potential decoupling of China and the US, even with a new, less combative US President, might prove a death knell to many a major international effort to solve global crises – especially around climate change.<sup>176</sup>

The clock does not stand alone. A large cohort of experts unaffiliated with the Doomsday Clock panel has also noted that we have edged ever close to nuclear war.<sup>177</sup> Even the Centers for Disease Control has begun raising awareness of the consequences of nuclear war and subsequent fallout.<sup>178</sup> Given the nature of wicked problems, a metaphorical 60 to 120 seconds should come as cold comfort. The clockminders now take account of discernible changes in our climate and anticipate the point at which continuing despoilment of the planet will make it uninhabitable. But let's forget climate change for now. At some point, someone, somewhere, will learn to love the bomb. Its fallout will be felt here in South Africa, and virtually everywhere else.

### *Dirty bombs as a wicked problem in and for South Africa*

The idea of terrorists accomplishing such a thing is, unfortunately, not out of the question; it is far easier to make a crude, unsafe, unreliable nuclear explosive that might fit in the back of a truck than it is to make a safe, reliable weapon of known yield that can be delivered by missile or combat aircraft. Numerous government studies have concluded that it is plausible that a sophisticated terrorist group could make a crude bomb if they got the needed nuclear material. And in the last quarter century, there have been some 20 seizures of stolen, weapons-usable nuclear material, and at least two terrorist groups have made significant efforts to acquire nuclear bombs.<sup>179</sup>

<sup>175</sup> R Haas 'The Pandemic Will Accelerate History Rather Than Reshape It: Not Every Crisis Is a Turning Point' *Foreign Affairs* (7 April 2020), accessed at [https://www.foreignaffairs.com/articles/united-states/2020-04-07/pandemic-will-accelerate-history-rather-reshape-it?utm\\_](https://www.foreignaffairs.com/articles/united-states/2020-04-07/pandemic-will-accelerate-history-rather-reshape-it?utm_).

<sup>176</sup> J Colgan 'The Climate Case Against Decoupling: Severing U.S.-Chinese Links Would Make It Impossible to Save the Environment' *Foreign Affairs* (14 September 2020), accessed at [https://www.foreignaffairs.com/articles/united-states/2020-09-14/climate-case-against-decoupling?utm\\_](https://www.foreignaffairs.com/articles/united-states/2020-09-14/climate-case-against-decoupling?utm_).

<sup>177</sup> M Beckman 'We're Edging Closer to Nuclear War: Experts are Worried about India, Pakistan and North Korea' *FiveThirtyEight* (15 May 2017), accessed at <http://www.fivethirtyeight.com>.

<sup>178</sup> S Kaplan 'C.D.C. Postpones Session Preparing U.S. for Nuclear War' *The New York Times* (12 January 2018), accessed at <https://www.nytimes.com/2018/01/12/health/cdc-nuclear-war.html>. The CDC, in preparation for its session, posted the following assessment on its website: 'While nuclear detonation is unlikely, it would have devastating results and there would be little time to take critical protection steps. Despite the fear surrounding such an event, planning and preparation can lessen deaths and illness.' *Centers for Disease Control* (January 2018), accessed at <https://www.cdc.gov/cdcgrandrounds/achives/2018/January2018.htm>.

<sup>179</sup> M Bunn & N Roth 'The Effects of a Single Terrorist Nuclear Bomb' *The Bulletin of Atomic Scientists* (28 September 2017), accessed at <https://thebulletin.org/2017/09/the-effects-of-a-single-terrorist-nuclear-bomb/>.

Terrorists have issued threats against targets within South Africa. What might the result of such an attack be?

The [nuclear] blast would expand almost instantly into a fireball the width of four football fields, incinerating essentially everything and everyone within ... At the instant of its detonation, the bomb would also release an intense burst of gamma and neutron radiation which would be lethal for nearly everyone directly exposed within about two-thirds of a mile from the center of the blast ... The heat from the fireball would ignite fires and horribly burn everyone exposed outside at distances of nearly a mile away ... The combination of blast, heat, and radiation would kill virtually everyone in this zone. The damage from the explosion would extend far beyond this inner zone of almost total death ... The bomb's immediate effects would be followed by a slow, lingering killer: radioactive fallout ... The explosion would also destroy much of the city's ability to respond. Hospitals would be leveled, doctors and nurses killed and wounded, ambulances destroyed. [T]here is no way any city can genuinely be prepared for a catastrophe on such a historic scale, occurring in a flash, with zero warning ... '[N]o significant [national] response' would be available for 24-to-72 hours. Many of those burned and injured would wait in vain for help, food, or water, perhaps for days. The economic impact of such an attack would be enormous. The effects would reverberate for so far and so long that they are difficult to estimate in all their complexity. Hundreds of thousands of people would be too injured or sick to work for weeks or months. Hundreds of thousands more would evacuate to locations far from their jobs. Many places of employment would have to be abandoned because of the radioactive fallout ... Consumer and investor confidence would likely be dramatically affected, as worried people slowed their spending. Enormous new homeland security and military investments would be very likely. If the bomb had come in a shipping container, the targeted country – and possibly others – might stop all containers from entering until it could devise a system for ensuring they could never again be used for such a purpose, throwing a wrench into the gears of global trade for an extended period ... Consequently, while some countries may feel that nuclear terrorism is only a concern for the countries most likely to be targeted – such as the United States – in reality it is a threat to everyone, everywhere. In 2005, then-UN Secretary-General Kofi Annan warned that these global effects would push 'tens of millions of people into dire poverty,' creating 'a second death toll throughout the developing world.' One recent estimate suggested that a nuclear attack in an urban area would cause a global recession, cutting global Gross Domestic Product by some two percent, and pushing an additional 30 million people in the developing world into extreme poverty.<sup>180</sup>

South Africa may be a low level, but real, target for such an attack.<sup>181</sup> But that's not the point of the example. The real point is four-fold. Likely countries for such an attack have neither the means of defence nor the ability to respond adequately. The danger – no longer a fiction – has not moved all parties that create nuclear grade fissionable material from

<sup>180</sup> *ibid.* citing amongst others, A Wellerstein's 'Nukemap' at <https://nuclearsececy.com> (draws on declassified US government data, e.g., *The Effects of Nuclear Weapons*, to provide estimates of heat, blast, and radiation effects); US Interagency Policy Subcommittee for Preparedness and Response to Radiological and Nuclear Threats Planning *Guidance for Response to Nuclear Detonation* (June 2010), accessed at <https://www.remml.nlm.gov/PlanningGuidanceNuclearDetonation.pdf>; K Annan 'Secretary-General Offers Global Strategy for Fighting Terrorism, in Address to Madrid Summit' *United Nations* (10 March 2005), accessed at <http://www.un.org/press/en/2005/sgsm9757.doc.htm>.

<sup>181</sup> D Coats 'Worldwide Threat Assessment of the US Intelligence Community' (2018) *Office of the Director of National Intelligence*, accessed at <https://www.dni.gov>; J Wicks 'ISIS a Real Threat in South Africa' *The Times* (26 February 2018), accessed at <https://www.timeslive.co.za>.

preventing its loss through theft or sale. The effect of a single localised attack would cripple the entire world – perhaps harming the already worst off most (at least indirectly). Adequate cooperation amongst nations to forestall such a global disaster does not exist. Why? The complexity of the danger (because the threat no longer issues from an identifiable foe), and the difficulty in its prevention (because the mechanisms for delivery are so numerous – from trucks to shipping containers to drones) make it next to impossible to turn back the clock. It certainly doesn't help that the international or multilateral institutions necessary to provide an adequate response do not exist. We ignore the immediate nature of this threat at our own peril. Our inextricable link to the world of nations ensures that South Africa must face the same threats from exogenous sources as everyone else.

## F. Wicked Problem 2 – Climate Change and Resource Scarcity as a Wicked Problem and a South African Crisis

We've already established that a concatenation of different organisations – small, medium and large; domestic and international – brought the apartheid state to its knees. No outright war was fought (though sufficient civil strife existed to make the country ungovernable), and the political keys to the kingdom were turned over to the majority of South Africans in 1994. At roughly the same period of time, scientists started to become increasingly alarmed by signs of global warming generated by carbon emissions almost wholly a function of human practices since the advent of the first industrial revolution. While we lacked overwhelming data 25 years ago, sufficient signs of significant climate change had emerged for scientists to turn their attention to alterations in our environment and the threats such changes pose to a broad array of natural resources necessary for human survival.

While apartheid had had a well-established definition and palpable characteristics, the same could not be said for global warming and climate change. Not only did global warming and climate change in the 1990s initially lack a definitive formulation, the evidence at the time remained too thin. In less than a decade, this view would change. Within 15 years the entire scientific community agreed that it posed the second greatest threat to human survival. The causes of global warming and climate change remain so complicated, that no single solution can as yet be proposed. A halt in CO<sub>2</sub> emissions, deforestation or even the eating of meat might be sufficient to reverse some of the damage already done.<sup>182</sup> New technology might be able to reflect all significant solar radiation – but its downstream viability may not be known for another decade. The acceleration of global warming and climate change don't allow for a large variety of experiments to test for optimal choices. Resources and time are limited.<sup>183</sup> The interaction between various natural systems makes it impossible to determine whether a solution to global warming

<sup>182</sup> Of course, ruminants – cows, sheep, goats – only produce 4% of methane emissions, but methane is 84 times as powerful as CO<sub>2</sub> as a greenhouse gas, during the first two decades of release.

<sup>183</sup> For argument's sake, let's assume that the state – in all its forms – begins to take water security seriously. The actual feat of building new desalination plants and grey water treatment processes gets meaner still. Experts on desalination contend that:

Technology advances for desalination are not going to change the fundamental factors: it requires a lot of electricity, it generates a lot of concentrated salty water, its cost will always be high compared with readily available surface water sources, there is the risk that a return to normal precipitation will make it unnecessary for the duration of plenty, and by the time drought conditions return the particular type of reverse osmosis technology used might be obsolete.

or some other problem will stymie or accelerate the adverse effects of climate change in another domain.<sup>184</sup> We also don't know enough to assess the extent of the harm that has been done to the environment but has yet to register on our daily gauge.<sup>185</sup> However, the rapid changes are so palpable and so severe that we can expect them to worsen over time. Moreover, the complexity of the problem leaves it unclear as to whether successful changes with respect to one part of the environment may actually have untoward and unexpected negative consequences in another part of the environment. The worst part. We know it's a problem, yet the commitment to collective action required on a municipal level, a national level and, most importantly, on an international level does not currently exist as of November 2020. The high-water mark, the Paris Agreement, quickly met its end when the United States withdrew.<sup>186</sup> Since the Agreement never had binding legal effect, attempts to limit carbon emissions through a hodgepodge of commitments cannot possibly beat back the continuous noxious outputs of the United States, China and India. The world awaits a Green New Deal in the United States – and cooperation on emissions between the United States and China. Joseph Biden's election as US President should help restart multinational efforts. But it is no guarantee of a binding agreement with real teeth. In addition, even as the price point for renewables drops, entrenched political and economic interests across the planet will continue to be significant hurdles. Time is short – and each hurdle often poses a discrete problem that requires time, effort and money to be resolved.

To be clear. We knew that apartheid constituted a crime against humanity and were, over a fairly short period of time, able to eliminate its formal components. We have nothing close to a complete picture of global warming or climate change, and thus have

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Water Resources Group *Charting Our Water Future* (2009). Running costs and cost recovery will dog any new and substantial water creation projects. One reason to maintain one's investment grade status is to enable the government to issue bonds to pay for necessary infrastructure. South Africa's junk status makes such bonds and other investments far less attractive. Now take both a city and a country subject to recessions and a contracting economy generally (-2.4% in the first quarter of 2018). As the public fiscus shrinks, so does the ability to pay for expensive new desalinisation plants.

<sup>184</sup> We don't think much about the effects of our behaviour on insects. But we should. For example, what if climate change has played a significant role in the decline of insect biomass by 76% in the last 25 years. (Pesticides and deforestation clearly play a role.) While the causality is not entirely clear, the consequences are. If insects disappear, *then the entire ecosystem*, in which insects play critical roles, *will collapse*. Editorial Board 'Insect Armageddon' *The New York Times* (29 October 2017), accessed at <https://www.nytimes.com/2017/10/29/opinion/insect-armageddon-ecosystem-.html>.

<sup>185</sup> R Dirzo et al. 'Defaunation in the Anthropocene' (2014) 345 *Science* 401:

Invertebrate patterns are equally dire: 67% of monitored populations show 45% mean abundance decline. Such animal declines will cascade onto ecosystem functioning and human well-being. Much remains unknown about this 'Anthropocene defaunation'; these knowledge gaps hinder our capacity to predict and limit defaunation impacts. Clearly, however, defaunation is both a pervasive component of the planet's sixth mass extinction and also a major driver of global ecological change.

<sup>186</sup> Examples of the coverage of the USA's exit from the Paris Agreement in academia and the media can be seen here: Z Hai-Bin, D Han-Cheng, H Lai, W Wen-Tao 'US Withdrawal from the Paris Agreement: Reasons, Impacts, and China's response' (2017) 8 *Advances in Climate Change Research* 220; V Volcovici 'US Submits Formal Notice of Withdrawal from Paris Climate Pact' *Reuters* (4 August 2017), accessed at <https://www.reuters.com/article/us-un-climate-usa-paris/u-s-submits-formal-notice-of-withdrawal-from-paris-climate-pact-idUSKBN1AK2FM>; J Urpelainen 'Trump's Withdrawal from the Paris Agreement Means Other Countries Will Spend Less to Fight Climate Change' *Washington Post* (21 November 2017), accessed at <https://www.washingtonpost.com/news/monkey-cage/wp/2017/11/21/trumps-noncooperation-threatens-climate-finance-under-the-paris-agreement/?noredirect=on>.

no idea exactly which buttons must be pushed in order to stop the harm or reverse the damage already done. We've known that South Africa would face severe droughts and water shortages for over a decade. Cape Town was expected to run out of water in 2025.

Instead, extreme water restrictions were imposed in 2017 and agricultural production decreased by 24% in a single year. Why? We failed – unlike similar neighbouring countries, e.g., Namibia – to produce the necessary desalination plants and other water security measures to head off a disaster of our own making.<sup>187</sup>

Whether we can still overcome the manifold challenges of climate change and resource scarcity in South Africa constitutes the subject matter of the next section. First, I pull the lens out and then I zoom back in. I use the international setting because climate change qua wicked problem is a global crisis. However, this exercise is not primarily designed to generate despair. My intention is to demonstrate that solutions to climate change – like solutions to the mass unemployment that flows from technological disruption and automation – cannot come solely from existing (and currently dysfunctional) systems employed in South Africa. South Africa's challenges are inextricably intertwined with global challenges.

### *How to think about climate change*

When Dr Kimberly Nicholas teaches climate change in the frosty – but warming – climes of southern Sweden, she centres her curriculum around six themes:<sup>188</sup> 1. It's the climate. 2. It's warming. 3. It's us. 4. We're sure. 5. It's bad. 6. We can fix it.<sup>189</sup> We can, at the very least, converse if not agree, about all six climate change leitmotifs.

Whether we are talking about the increase in hurricanes in the Caribbean,<sup>190</sup> or a sea level rise that causes tiny Pacific islands to disappear,<sup>191</sup> we are not witnessing 'acts of God'

<sup>187</sup> K Liao 'Dirty Sea Water Brings Cape Town Desalination Plant to a Halt' *News 24* (7 May 2019), accessed at <https://m.news24.com/SouthAfrica/News/dirty-sea-water-brings-cape-town-desalination-plant-to-a-halt-20190506>. Even limited, temporary desalination efforts have run aground. The R60m V&A Waterfront desalination plant – which would provide a mere 0.3% of the metropole's needs – has been dormant since February 2019. 'Quality Filter Systems (QFS), the plant owner and contractor, said the decision to stop operation was due to concerns about the "legality" of the ocean water being injected into the plant.' *ibid.* In addition, the city has yet to make any payments on the plant.

<sup>188</sup> K Nicholas, P Ambros, N Nasir, E Redford, C Tsoi & M Weschke 'An Open-Source Climate Change Curriculum for University Education' (2015), accessed at [www.kimnicholas.com/uploads/2/5/7/6/.../nicholas-climate-curriculum-ocf\\_post.docx](http://www.kimnicholas.com/uploads/2/5/7/6/.../nicholas-climate-curriculum-ocf_post.docx).

<sup>189</sup> These themes are also used elsewhere: J Krosnick, A Holbrook, L Lowe & P Visser 'The Origins and Consequences of Democratic Citizens' Policy Agendas: A Study of Popular Concern about Global Warming' (2006) 77 *Climate Change* 7; D Ding, E Maibach, X Zhao, C Roser-Renouf & A Leiserowitz 'Support for Climate Policy and Societal Action are Linked to Perceptions about Scientific Agreement' (2011) 1 *Nature: Climate Change* 462.

<sup>190</sup> Hurricane Leslie, initially a little storm, gained force and took an unexpected detour to the Iberian Peninsula. M Shepherd 'You Are Not Hallucinating: Hurricane Leslie is Headed Towards Spain and Africa' *Forbes* (12 October 2018), accessed at <https://www.forbes.com/sites/marshallshepherd/2018/10/12/you-are-not-hallucinating-hurricane-leslie-is-headed-toward-spain-and-africa/#121a9f654453>.

<sup>191</sup> Research conducted on Pohnpei in Micronesia, and published in 2017, found evidence of the disappearance of eight low-lying islands in the last century. P Nunn, A Kohler & R Kumar 'Identifying and Assessing Recent Shoreline Change Attributable to Uncommonly Rapid Sea-Level Rise in Pohnpei, Federated States of Micronesia, Northwest Pacific Ocean' (2017) 21(6) *Journal of Coastal Conservation* 719, 730.

but human-made destruction of virtually every ecosystem.<sup>192</sup> ‘It’s the climate.’

More specifically, these climatic changes are related to an overall process of warming which varies across the world, and is manifest in greater but context-specific extremes.<sup>193</sup> The IPCC reported that temperatures had already increased by at least one degree above pre-industrial levels in 2017.<sup>194</sup> In some areas, however, the temperature increase has been almost two percent above pre-industrial levels: that extreme change holds for southern Africa, where the climate is already semi-arid to arid.<sup>195</sup> Even worse, according to the IPCC, not only are temperatures in sub-Saharan Africa projected to continue to be higher than those of the global average;<sup>196</sup> the largest increases in temperature are expected in the south-western region: South Africa, Botswana and Namibia.<sup>197</sup> South Africa, already hot and dry, is expected to see the greatest reduction in precipitation.<sup>198</sup> ‘It’s warming.’

The bumper sticker – ‘It’s us’ – identifies the causes of climate change as anthropogenic. Climate denialists enjoy pointing to Milankovich cycles<sup>199</sup> and contend that climate changes occur naturally, and dramatically, all the time. Europe experienced a mini-Ice Age that lasted at least three centuries – from 1300 to 1600 (perhaps longer).<sup>200</sup> Since humans had nothing to do with that severe climate change, so goes denialist logic, it ostensibly follows that we have had nothing to do with what is happening now.<sup>201</sup>

<sup>192</sup> Intergovernmental Panel on Climate Change *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change* (2012).

<sup>193</sup> Intergovernmental Panel on Climate Change *Summary for Policymakers: The Physical Science Basis. Contribution of Working Group I to the 5 Assessment Report of the Intergovernmental Panel on Climate Change* (2013).

<sup>194</sup> M Allen, O Dube, W Solecki, F Aragón-Durand, W Cramer, S Humphreys, M Kainuma, J Kala, N Mahowald, Y Mulugetta, R Perez, M Wairiu & K Zickfeld ‘Framing And Context: On The Impacts of Global Warming of 1.5°C Above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty’ in V Masson-Delmotte, P Zhai, H Pörtner, D Roberts, J Skea, P Shukla, A Pirani, W Moufouma-Okia, C Péan, R Pidcock, S Connors, J Matthews, Y Chen, X Zhou, M Gomis, E Lonnoy, T Maycock, M Tignor & T Waterfield (eds) *Global Warming of 1.5 °C. An IPCC Special Report* (2018) 51.

<sup>195</sup> M Jury ‘Climate Trends in Southern Africa’ (2011) 109 *South African Journal of Science* 53.

<sup>196</sup> T Weber et al. ‘Analysing Regional Climate Change in Africa in a 1.5°C, 2°C and 3°C Global Warming World’ (2018) 6 *Earth’s Future* 13, accessed at <https://doi.org/10.1002/2017ef000714>.

<sup>197</sup> F Engelbrech et al. ‘Projections of Rapidly Rising Surface Temperatures Over Africa Under Low Mitigation’ (2015) 10(8) *Environmental Research Letters*, 085004, accessed at <https://doi.org/10.1088/1748-9326/10/8/085004>; G Maure et al. ‘The Southern African Climate under 1.5°C and 2°C of Global Warming as Simulated by CORDEX Regional Climate Models’ (2018) 13(6) *Environmental Research Letters* 065002, accessed at <https://doi.org/10.1088/1748-9326/aab190>.

<sup>198</sup> *ibid.*

<sup>199</sup> Milankovich cycles describe the variations in the Earth’s movements around the sun, which affect the climate over long, predictable time spans. The dominant variations fall into three categories: orbital shape, axial tilt and precession. A Dawson ‘Milankovich Cycles and Climate Change’ in P Hancock & B Skinner *The Oxford Companion to the Earth* (2003).

<sup>200</sup> R Black ‘Volcanic Origin of the Little Ice Age’ *BBC News* (30 January 2012), accessed at <https://www.bbc.com/news/science-environment-16797075>.

<sup>201</sup> For some classical claims made by climate sceptics, as well as the scientific claims that refute them, see ‘Global Warming and Climate Change Myths’ *Skeptical Science* (2020), accessed at <https://www.skepticalscience.com>.

It's quite true that the climate changes naturally. The mini-European Ice Age is but one example. In the last 7 000 years, the rate of temperature change has been around  $-0.01$  degrees/century.<sup>202</sup> However, in the last 100 years, the rate increased to  $0.7$  degrees/century.<sup>203</sup> In the last 45 years, the increase in temperature has accelerated by  $1.7$  degrees/century.<sup>204</sup>

This data indicate warming at a rate that has accelerated beyond standard natural measures. Furthermore, the current acceleration in temperature closely correlates with increased anthropogenic carbon emissions since the mid-20th century: the Great Acceleration.<sup>205,206</sup> More than 97% of studies examining global warming endorse the view that the current trends in climate change are anthropogenic.<sup>207</sup> 'We're sure.'

'It's bad.' According to one projection, the annual welfare growth in the European Union may be decreased by half due to climate change.<sup>208</sup> Adaptation will be possible in the EU – given the significant wealth of the region.<sup>209</sup> However, reworking living conditions will prove far more challenging in poorer regions – say, southern Africa. Agricultural output will contract.<sup>210</sup> Food shortages will increase already high levels of severe hunger and malnutrition.<sup>211</sup> We've already seen how COVID-19 interacts and accelerates existing levels of food poverty and hunger.

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com/argument.php.

<sup>202</sup> O Gaffney & W Steffen 'The Anthropocene Equation' (2017) *The Anthropocene Review* 1, 3.

<sup>203</sup> Intergovernmental Panel on Climate Change (IPCC) *Climate Change 2013: The Physical Science Basis. Contribution of Working Group 1 to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (2013), accessed at <http://www.ipcc.ch/report/ar5/wg1/citation/WGIAR5>.

<sup>204</sup> National Oceanic and Atmospheric Administration 'State of the Climate: Global Analysis for Annual 2015' (2016) *National Centers for Environmental Information*, accessed at <http://www.ncdc.noaa.gov/sotc/global/201513>.

<sup>205</sup> W Steffen, A Sanderson & P Tyson *Global Change and the Earth System: A Planet Under Pressure* (2004); W Steffen, P Crutzen & J McNeill 'The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?' (2007) 36 *Ambio* 614; W Steffen, Å Persson, L Deutsch et al. 'The Anthropocene: From Global Change to Planetary Stewardship' (2011) 40 *Ambio* 739; C Waters, J Zalasiewicz, C Summerhayes et al. 'The Anthropocene is Functionally and Stratigraphically Distinct from the Holocene' (2016) 351 (6269) *Science* 137; O Gaffney & W Steffen 'The Anthropocene Equation' (2017) *The Anthropocene Review* 1, 3.

<sup>206</sup> K Hayhoe, D Cayan, C Field, P Frumhoff, E Maurer, N Miller, S Moser, S Schneider, K Nicholas Cahill, E Cleland, L Dale, R Drapek, R Hanemann, L Kalkstein, J Lenihan, C Lunch, R Neilson, S Sheridan & J Verville 'Emissions Pathways, Climate Change, and Impacts on California' (2004) 101(34) *Proceedings of the National Academy of Sciences of the United States of America* 12422, 12427.

<sup>207</sup> J Cook, D Nuccitelli, S Green, M Richardson, B Winkler, R Painting, R Way, P Jacobs & A Skuce 'Quantifying the Consensus on Anthropogenic Global Warming in the Scientific Literature' (2013) 8 *Environmental Research Letters* 6.

<sup>208</sup> J-C Ciscara, A Iglesias, L Feyen, L Szabó, D Van Regemorter, B Amelung, R Nicholls, P Watkiss, O Christensen, R Dankers, L Garrote, C Goodess, A Hunt, A Morena, J Richards & A Soria 'Physical and Economic Consequences of Climate Change in Europe' (2011) 108(7) *Proceedings of the National Academy of Sciences of the United States of America* 2682.

<sup>209</sup> According to the IMF, this figure stood at \$19.1 trillion at the end of 2018. International Monetary Fund *World Economic Outlook Database 2018* (31 December 2018). See also World Bank *GDP in Europe*, accessed at <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=PL-GR-PT-DE-EU>.

<sup>210</sup> E Archer, N Oetlér, R Louw & M Tadross 'Farming on the Edge in Arid Western South Africa: Climate Change and Agriculture in Marginal Environments' (2008) 93(2) *Geography* 98.

<sup>211</sup> 'You Can't Teach a Hungry Child: School Nutrition in Focus' *StatsSA* (20 September 2016), accessed at <http://www.statssa.gov.za/?p=8392>. Reliable figures placed the number of persons in South Africa experiencing hunger and living at the food poverty line at 25% to 30% in 2019.

One primary reason that ‘it’s bad’ is inertia. Some predict that more than half of the world’s energy production will still come from fossil fuels in 2040 (specifically oil, coal and natural gas).<sup>212</sup> Those emissions will continue to warm the planet for decades thereafter. It follows, according to the UN’s Intergovernmental Panel on Climate Change Report – *Global Warming of 1.5%* – that we will not have met the goal of 85% renewable energy resources required to forestall the 1.5% increase in temperature that will likely lead to catastrophic and irreversible climate change.<sup>213</sup> ‘It’s bad.’ How bad is the source of much debate. The price point for renewables such as wind and solar has dropped precipitously.<sup>214</sup> Indeed, it has dropped so far and so fast that – as an obviously unintended consequence of the drop in demand for coal during the COVID-19 pandemic – the United States is poised to use more renewable energy than coal-driven energy in 2020.<sup>215</sup>

The consequences of climate change may be particularly severe in South Africa – and not only because of worldwide increases. South Africa is heavily dependent on fossil fuels for energy. While South Africa’s GDP accounts for only 0.6% of global GDP, the country is responsible for 1.1% of the world’s carbon emissions.<sup>216</sup> The province of Mpumalanga, where many of the country’s coal mines and coal-fired power stations are located, has been deemed the world’s largest NO<sub>2</sub> pollution hotspot.<sup>217</sup> Not only is South Africa’s energy industry filthy-dirty, we can hardly complain about the deleterious effect of climate change on this country, when we ourselves must bear the responsibility for both local health problems and worldwide health problems linked to the damage done by our own 2% increase in temperature. (That 2% increase places us significantly over the 1.5% increase in warming that many believe to be the point of no return.)

What of the final nostrum: ‘We can fix it’? Perhaps. But we would all – eight billion of us – have to ‘step up’ in order to meet the desiderata for the reversal of global warming

<sup>212</sup> BP *BP Energy Outlook: 2018 Edition* (2018) 114, accessed at <https://www.bp.com/content/dam/bp/en/corporate/pdf/energy-economics/energy-outlook/bp-energy-outlook-2018.pdf>.

<sup>213</sup> IRENA *Power System Flexibility For The Energy Transition* (2018), accessed at [https://www.irena.org/media/Files/IRENA/Agency/Publication/2018/Nov/IRENA\\_Power\\_system\\_flexibility\\_1\\_2018.pdf?la=en&hash=72EC26336F127C7D51DF798CE19F477557CE9A82](https://www.irena.org/media/Files/IRENA/Agency/Publication/2018/Nov/IRENA_Power_system_flexibility_1_2018.pdf?la=en&hash=72EC26336F127C7D51DF798CE19F477557CE9A82).

<sup>214</sup> S Marcacci ‘The Coal Cost Crossover: 74% of US Coal Plants Now More Expensive than New Renewables, 86% By 2025’ *Forbes: Energy Innovation: Policy and Technology* (26 March 2019), accessed at <https://www.forbes.com/sites/energyinnovation/2019/03/26/the-coal-cost-crossover-74-of-us-coal-plants-now-more-expensive-than-new-renewables-86-by-2025/>.

<sup>215</sup> B Plummer ‘In a First, Renewable Energy Is Poised to Eclipse Coal in US: The Coronavirus Has Pushed the Coal Industry to Once-Unthinkable Lows, and the Consequences for Climate Change are Big’ *The New York Times* (13 May 2020), accessed at <https://www.nytimes.com/2020/05/13/climate/coronavirus-coal-electricity-renewables.html>.

<sup>216</sup> A Marquard ‘South Africa and the G20: Where Do We Stand on Greenhouse Gas Emissions?’ *UCT News* (11 July 2017), accessed at <https://www.news.uct.ac.za/article/-2017-07-05-south-africa-and-the-g20-where-do-we-stand-on-greenhouse-gas-emissionsa>.

<sup>217</sup> ‘New Satellite Data Analysis Reveals World’s Biggest NO<sub>2</sub> Emission Hotspots’ *Greenpeace* (29 October 2018), accessed at <https://www.greenpeace.org/international/press-release/19072/greenpeace-analysis-of-new-satellite-data-reveals-worlds-biggest-no2-emissions-hotspots/>. One of the top 20 in the world happens to be in Mpumalanga, home to South Africa’s largest coal fire plants. Because the wind blows west, the particulates settle over Johannesburg and Pretoria and turn them into two of the most polluted cities in the world.

set out by the UN's IPCC.<sup>218</sup> That's a big ask. Despite the precipitous drop in the cost of renewables and greater private use by firms and homeowners, the state-owned, debt-ridden utility, Eskom, remains wedded to coal.<sup>219</sup> So wedded that the return to near normal levels of energy use in mid-2020 brought back loadshedding. Given South Africa's lack of political will and crumbling infrastructure, it is therefore worth asking again: 'Can we fix it?'

### *Climate change as a wicked problem in South Africa: Zooming in*

Climate change has often been described as a wicked problem<sup>220</sup> and it readily fits Rittel and Webber's typology.<sup>221</sup> Sun and Yang have written usefully about climate change as a 'social mess' rife with 'fragmentation'. In short, many decision-makers – from individuals, to communities, to firms, to nation-states – act independently and at cross purposes with one another.<sup>222</sup> Peters states the obvious: no multilateral, global institution takes responsibility or has control over this wicked problem.<sup>223</sup> Similarly, Levin demonstrates

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<sup>218</sup> A recent report by the IPCC is not sanguine by any means – and climate scientists are increasingly more sceptical about our capacity to stay below 1.5 degrees of warming. H de Coninck, A Revi, M. Babiker, P Bertoldi, M Buckeridge, A Cartwright, W Dong, J Ford, S Fuss, JC Hourcade, D Ley R Mechler, P Newman, A Revokatova, S Schultz, L Steg & T Sugiyama '2018: Strengthening and Implementing the Global Response' in V Masson-Delmotte, P Zhai, H Pörtner, D Roberts, J Skea, P Shukla, A Pirani, W Moufouma-Okia, C Péan, R Pidcock, S Connors, J Matthews, Y Chen, X Zhou, M Gomis, E Lonnoy, T Maycock, M Tignor & T Waterfield (eds) *Global Warming of 1.5°C. An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty* (2018); E Linden 'How Scientists Got Climate Change So Wrong: Few Thought It Would Arrive So Quickly: Now We're Facing Consequences Once Viewed as Fringe Scenarios' *The New York Times* (08 November 2019), accessed at <https://www.nytimes.com/2019/11/08/opinion/sunday/science-climate-change.html>. For climate changes interaction with other wicked problems, see also V Masson-Delmotte, P Zhai, H Pörtner, D Roberts, J Skea, P Shukla, A Pirani, W Moufouma-Okia, C Péan, R Pidcock, S Connors, J Matthews, Y Chen, X Zhou, M Gomis, E Lonnoy, T Maycock, M Tignor and T Waterfield (eds) *Global Warming of 1.5°C. An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty* (2018).

<sup>219</sup> What happens when the politics of energy meets the politics of sustainable development? Gridlock or progress – depending upon who holds the levers of power. D Struck 'Power Pivot: What Happens in States Where Wind Dethrones King Coal?' *The Christian Science Monitor* (21 August 2020), accessed at <https://www.csmonitor.com/Environment/2020/0821/Power-pivot-What-happens-in-states-where-wind-dethrones-King-Coal?utm=>

In an age of global warming, coal consumption is dropping and renewable energy is rising. Nowhere is that trend – and the tension caused by the shift – more evident than in Wyoming, a state with prodigious amounts of fossil fuels and wind resources.

<sup>220</sup> J FitzGibbon & K Mensah 'Climate Change as a Wicked Problem: An Evaluation of the Institutional Context for Rural Water Management in Ghana' (2012) *SAGE Open* 1; C Termeer, A Dewulf, S Karlsson-Vinkhuyzen, M Vink & M van Vliet 'Coping with the Wicked Problem of Climate Adaptation Across Scales: The Five R Governance Capabilities' (2016) 154 *Landscape and Urban Planning* 11; K Peters 'Living with the Wicked Problem of Climate Change' (2018) 53 *Zygon* 427.

<sup>221</sup> *ibid.*

<sup>222</sup> J Sun & K Yang 'The Wicked Problem of Climate Change: A New Approach Based on Social Mess and Fragmentation' (2016) 8 *Sustainability* 1312, 1317–1320.

<sup>223</sup> K Peters 'Living with the Wicked Problem of Climate Change' (2018) 53(2) *Zygon* 427, 436.

how the short-term planning horizons of domestic governance structures and the absence of a central international authority with both responsibility and authority generate a not-so-slow-motion train-wreck.<sup>224</sup> Finally, per Rittel and Webber, many solutions to climate change problems generate new or reinforce existing climate change difficulties.<sup>225</sup>

The aforementioned characteristics of climate change often lead scholars to describe it as a ‘super-wicked problem’. Super-wicked problems possess the following four features:

- time is running out;
- those who cause the problem also seek to provide a solution;
- the central authority needed to address them is weak or non-existent; and
- irrational discounting occurs that pushes responses into the future.<sup>226, 227, 228</sup>

The most prominent document on climate change is the *United Nations Forum and Convention on Climate Change* and the most prominent scientific body is the United Nations’ Intergovernmental Panel on Climate Change (IPCC). That, unfortunately, is all we have when it comes to global governance on global issues of climate change. As Levin notes, both the *Convention* and the IPCC constitute excellent examples of weak or non-existent central authorities.<sup>229</sup>

The unceremonious departure of the US from the Paris Agreement<sup>230</sup> did not dramatically alter the terrain. The Agreement was, after all, non-binding. However, such withdrawal, had it been previously incorporated as a part of US municipal law, would have been more difficult. (Thirty years of dissembling by the oil and gas industry – and craven Republican Party buy-in – made both enlightened policy and stringent legal restrictions on CO<sub>2</sub> emissions impossible.<sup>231</sup>) More importantly, had it been more difficult, other parties to the Agreement would have had reason to treat it with greater seriousness and commitment.

<sup>224</sup> K Levin, B Cashore, S Bernstein & G Auld ‘Overcoming the Tragedy of Super Wicked Problems: Constraining Our Future Selves to Ameliorate Global Climate Change’ (2012) 45 *Policy Sciences* 123, 124.

<sup>225</sup> On the challenges associated with attempts to find climate solutions within existing, national systems, see J FitzGibbon & K Mensah ‘Climate Change as a Wicked Problem: An Evaluation of the Institutional Context for Rural Water Management in Ghana’ (2012) *SAGE Open* 1 at 4–7, 11–12.

<sup>226</sup> *ibid.*

<sup>227</sup> *ibid.* at 127–129.

<sup>228</sup> R Lazarus ‘Super-Wicked Problems and Climate Change: Restraining the Present to Liberate the Future’ (2008) 94(5) *Cornell Law Review* 1153; K Winters, J Cushing & D Lach ‘Designing Visualisation Software for Super-Wicked Problems’ (2016) 21 *Information Polity* 399; D Roberts ‘A Global Roadmap for Climate Change Action: From COP17 in Durban to COP21 in Paris’ (2016) 112 *South African Journal of Science* 3.

<sup>229</sup> K Levin, B Cashore, S Bernstein & G Auld ‘Overcoming the Tragedy of Super-Wicked Problems: Constraining Our Future Selves to Ameliorate Global Climate Change’ (2012) 45 *Policy Sciences* 123, 124.

<sup>230</sup> Z Hai-Bin, D Han-Cheng, H Lai & W Tao ‘US Withdrawal from the Paris Agreement: Reasons, Impacts and China’s Response’ (2017) 8 *Advances in Climate Change Research* 220.

<sup>231</sup> E Bayrasli & B McKibben ‘Climate Crunch Time’ *Project Syndicate* (29 September 2020), accessed at [https://www.project-syndicate.org/onpoint/climate-activism-divesting-from-fossil-fuels-by-bill-mckibben-and-elmira-bayrasli-2020-09?utm\\_](https://www.project-syndicate.org/onpoint/climate-activism-divesting-from-fossil-fuels-by-bill-mckibben-and-elmira-bayrasli-2020-09?utm_). McKibben writes:

The record is very, very clear. Companies like Exxon put good scientists on this, those scientists gave highly accurate forecasts of what was coming, and those forecasts were believed. Exxon started building all its drilling rigs to compensate for the rise in sea levels, because they knew what was coming. What they did not do was tell the rest of us. Instead, Exxon and its peers invested billions of dollars in a massive disinformation campaign that kept us locked in a completely phony debate about whether or not climate change was real. Both sides in this debate knew the answers from the beginning. But one of them was willing to lie in order to protect its business model. It may turn out to be the most

After Trump's withdrawal, the election of the populist Jair Bolsonaro in Brazil accelerated the diminishing degree of international political cohesion on the subject. Bolsonaro has not only opened up the Amazon to more commercial interests, he has withdrawn an offer to host the next UN Climate Conference and renounced Brazil's commitment to the Paris Agreement.<sup>232</sup> Under suboptimal conditions, tropical forests such as the Amazon have the potential to flip from being important carbon sinks to large-scale emitters of carbon.<sup>233</sup>

Not so ironically, China appears to be doing better with regard to the climate commitment stakes.<sup>234</sup> However, their actions are born of necessity not principle. The overall air quality in its major cities is ranked, by far, the worst in the world.<sup>235</sup> Meanwhile, the country's continued reliance on coal flows from autarkic motivations. As with all its trade policies, it prefers to rely upon its own goods rather than international trade.<sup>236</sup>

Yet China's green revolution, though somewhat staccato, appears to be irreversible. The country has committed to securing 15% of its energy from renewable sources by 2020, and 20% by 2030.<sup>237</sup> These goals are not far behind the European Union's celebrated commitment to achieve 20% renewables by 2020 and 27% by 2030.<sup>238</sup> China has the world's second largest economy, and given its political system and economic muscle, can decide whether the nation's self-interest is consistent with the development of renewable energy resources:

Notwithstanding market reforms that have addressed some of the problems China previously experienced in integrating renewable energy, the trend for clean energy in China defies easy analysis. Indeed, several contradictions continue to exist: national guidance versus local implementation, support for coal co-existing with promotion of renewables, and slow rollout of spot electricity markets. Based on the policies and government guidance released so far in 2020, China is likely to focus on keeping markets for wind and solar stable, while attempting to tackle structural issues on a step-by-step basis. While this [dual pathway] could disappoint

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consequential lie in human history, because it cost us 30 years that we could have been at work on this existential problem.

<sup>232</sup> F Maisonnave 'Amazon at Risk from Bolsonaro's Grim Attack on the Environment' *The Guardian* (9 October 2018), accessed at <https://www.theguardian.com/environment/2018/oct/09/brazils-bolsonaro-would-unleash-a-war-on-the-environment>; J Watts 'Brazil Reneges on Hosting UN Climate Talks under Bolsonaro Presidency' *The Guardian* (28 November 2018), accessed at <https://www.theguardian.com/world/2018/nov/28/brazil-reneges-on-hosting-un-climate-talks-under-bolsonaro-presidency>.

<sup>233</sup> A Aton 'Surprisingly, Tropical Forests Are Not a Carbon Sink' *Scientific American* (29 September 2017), accessed at <https://www.scientificamerican.com/article/surprisingly-tropical-forests-are-not-a-carbon-sink/>.

<sup>234</sup> A Hove 'Oxford Energy Comment: Current Direction for Renewable Energy in China' *The Oxford Institute for Energy Studies* (June 2020), accessed at <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2020/06/Current-direction-for-renewable-energy-in-China.pdf>:

China continues to lead the world in additions of new wind and PV capacity, even though in the past 18 months these installations have slowed. In 2018, China added a combined 66 GW of wind and solar (20 GW of wind and a record 44 GW of solar PV).

<sup>235</sup> R Trott 'Shanghai Suffers One of Its Worst Bouts of Pollution' *BBC News* (8 December 2013), accessed at <https://www.bbc.com/news/av/world-asia-china-25288170/shanghai-suffers-one-of-its-worst-bouts-of-pollution>.

<sup>236</sup> J Mathews & H Tan 'Introduction' in J Mathews & H Tan (eds) *China's Renewable Energy Revolution* (2015) 1, 5.

<sup>237</sup> J Mathews & H Tan 'Major Trends in China's Energy Revolution' in J Mathews & H Tan (eds) *China's Renewable Energy Revolution* (2015) 22, 24.

<sup>238</sup> European Commission *Renewable Energy Directive* (23 April 2009), accessed at <https://ec.europa.eu/energy/en/topics/renewable-energy/renewable-energy-directive>.

analysts who note the risk to public health and finances of further investments in fossil energy, the ultimate result could nevertheless favour a clean energy transition driven by a combination of both markets and policy.<sup>239</sup>

The truly precipitous drop in the price point in green technology in 2020 could reduce the politburo's decision to a simple cost/benefit analysis. However, as noted above, the rollout could still be limited by structural delays and internal coordination problems.

Decisions by different states regarding adoption of green technology defy conventional wisdom or categorisation. Authoritarian China<sup>240</sup> has outperformed flawed democracies such as the US, illiberal democracies such as Poland<sup>241</sup> and full democracies such as Japan. Japan has decided to build 22 coal-burning power plants to meet demand.<sup>242</sup> While this decision might be deemed an unintended consequence of the Fukushima nuclear disaster roughly a decade ago, Japan could have decided to more vigorously pursue other renewable sources of energy rather roll out a plan that relies on the dirtiest form of fuel. Can we draw any conclusion from the 'mess' above? Sure. Without any global governance – institutionally – most countries will choose to do what their leaders decide is in the national interest and not what is in the interest of all humanity.

Zooming in on South African energy policies gives us a better sense of why such international accords are so very difficult to reach. If one can't solve one's problems at home, then one can't enter into meaningful partnerships with other nations. To take the measure of this particular problem of collective action, the next few sections focus on three features:

- the water crisis in Cape Town;
- the two-year-old drought in the Eastern Cape that has dried out its dams and made subsistence farming impossible; and
- political paralysis and trade union protests regarding the closure of coal-fired power stations, and resistance to cooperating with independent power providers (IPPs) who have an excess of solar and wind generated power that could both mitigate if not alleviate problems with loadshedding and might supply the energy required to solve water scarcity issues throughout the Eastern Cape and Western Cape.

### *Cape Town's water crisis*

Cape Town has faced water shortages since 2015.<sup>243</sup> Long-term, climate change related drought forced the city, in 2018, to restrict residents to 50 litres of water per person per

<sup>239</sup> *ibid.*

<sup>240</sup> At the same time, China could use its position as a superpower with the world's largest economy (in terms of purchase power parity) to extract concessions on a variety of unrelated matters in order to secure agreement to enforceable international accords.

<sup>241</sup> P Krugman 'American Democracy May Be Dying: Authoritarian Rule May Be Just Around The Corner' *The New York Times* (10 April 2020), accessed at <https://www.nytimes.com/2020/04/09/opinion/wisconsin-primary-democracy.html>. Krugman compares US President Trump's and the Republican Party's efforts to suppress voter participation – and entrench the party's dominance at the state and federal level – with Hungarian Prime Minister Victor Orban's and the Fidesz Party's decade-long and successful efforts to turn that country into a one-party state that remains only notionally democratic.

<sup>242</sup> H Tabuchi 'Japan Races to Build New Coal-Burning Power Plants, Despite the Climate Risks' *The New York Times* (3 February 2020), accessed at <https://www.nytimes.com/2020/02/03/climate/japan-coal-fukushima.html>.

<sup>243</sup> 'Big Six Monitor' *Climate System Analysis Group*, accessed at <http://cip.csag.uct.ac.za/monitoring/bigsix.html>.

day.<sup>244</sup> That's the minimum level necessary in order to enable humans to function at the most basic level.<sup>245</sup> Furthermore, the city announced that should water levels dip any lower, the municipal water supply would be shut off for all users except hospitals, emergency services and the poorest residential areas.<sup>246</sup> Water-saving measures and well-timed rains prevented this dire emergency plan from being put into effect. However, Cape Town may still become the 'first major city in the world to run out of water'.<sup>247</sup>

According to popular consensus, Cape Town's water crisis is entirely a product of political mismanagement.<sup>248</sup> Some truth attaches to this claim.<sup>249</sup> However, the wicked nature of the problem suggests a more complex set of causal interactions.<sup>250</sup> In fact, the wicked problem of the water crisis points to other wicked problems – as Rittel and Webber have taught us to expect. The most obvious cause of the water crisis is the drought from 2015 onwards.<sup>251</sup> This general drought occurred across South Africa.<sup>252</sup> While the

<sup>244</sup> A de Klerk 'If You Use More Than 50l of Water a Day in Cape Town, You Will Be Punished Financially' *Business Day* (18 January 2018), accessed at <https://www.businesslive.co.za/bd/national/2018-01-18-if-you-use-more-than-50l-of-water-a-day-in-cape-town-you-will-be-punished-financially/>.

<sup>245</sup> P Gleick 'Basic Water Requirements for Human Activities: Meeting Basic Needs' (1996) 21 *Water International* 83.

<sup>246</sup> A Baker 'When the Taps Run Dry' *Time* (19 February 2018) 33, 37.

<sup>247</sup> A Maxmen 'As Cape Town Water Crisis Deepens, Scientists Prepare for 'Day Zero'' *Nature* (24 January 2018), accessed at <https://www-nature-com.ludwig.lub.lu.se/articles/d41586-018-01134-x>.

<sup>248</sup> D Olivier 'Cape Town's Water Crisis: Driven by Politics More Than Drought' *The Conversation* (12 December 2017), accessed at <https://theconversation.com/cape-towns-water-crisis-driven-by-politics-more-than-drought-88191>. But see A Fallon 'A Perfect Storm: The Hydropolitics of Cape Town's Water Crisis' (2018) *Global Water Forum*, accessed at <http://www.globalwaterforum.org/2018/04/17/the-hydropolitics-of-cape-towns-water-crisis-a-perfect-storm/>.

<sup>249</sup> To make matters worse – politics, ever and always present – has thrown a spanner in the works. The mayor was stripped of her powers over water affairs because her own party – the Democratic Alliance (DA) – found her to be unsuited to the task. The national government, under the African National Congress, demonstrated that was more concerned with undermining the DA's claim to be the party of good governance than with ensuring that four million inhabitants had access to potable water. That observation reveals another sticking point in our highly stratified society. Many observers initially claimed that the shortage was partially due to the increase in the metropole's size from one million to four million. The implication, of course, was that a significant influx of poor newcomers – especially from the Eastern Cape – had placed a significant strain on water levels. Yet only 5% of water use can be attributed to the townships on the Cape Flats and other poorer sections of the metropole. Moreover, like other major cities around the globe grappling with water shortages, women, often charged with finding potable water, find themselves confronted with corrupt officials and truck drivers. These controllers of the tap ask: who will pay or provide sexual favours? Cape Town may turn out to be little different than its sister-city Mexico City. M Kimmelman 'Mexico City, Parched and Sinking, Faces a Water Crisis: Climate Change is Threatening to Push a Crowded Capital to the Breaking Point' *The New York Times* (17 February 2017), accessed at <https://www.nytimes.com/interactive/2017/02/17/world/americas/mexico-city-sinking.html>. (On the reasons and consequences of Mexico City's ongoing battle, and losing war, against severe water shortages and long-term water outages, now further hastened by an overheated environment.)

<sup>250</sup> A Fallon 'A Perfect Storm: The Hydropolitics of Cape Town's Water Crisis' (2018), accessed at <https://globalwaterforum.org/2018/04/17/the-hydropolitics-of-cape-towns-water-crisis-a-perfect-storm/>.

<sup>251</sup> A Maxmen 'As Cape Town Water Crisis Deepens, Scientists Prepare for 'Day Zero'' *Nature* (24 January 2018), accessed at <https://www-nature-com.ludwig.lub.lu.se/articles/d41586-018-01134-x>.

<sup>252</sup> M Baudoin, C Vogel, K Nortje & M Naik 'Living with Drought in South Africa: Lessons learnt from the Recent El Nino Drought Period' (2017) 23 *International Journal of Disaster Risk Reduction* 128, 129.

hydrological causes of this drought are complex, the Climate Systems Analysis Group (CSAG) at the University of Cape Town has calculated that the low level of rainfall in the three-year period from 2015 through 2017 is only seen once in 628 years. The rainfall level over the two-year period of 2016–2017 is experienced only once in 1 150 years.<sup>253</sup> Given that such droughts are extremely rare, the more nuanced question is why the state failed to prepare<sup>254</sup> for a decade-long expectation of extreme anthropogenic climate change.<sup>255</sup>

If global climate change is the broader cause of the water scarcity in Cape Town, then the city is the victim of a far larger, only partially predictable, problem. Cities all over the world have experienced similar challenges.<sup>256</sup> In 2014, Sao Paulo, Brazil, had only 20 days of water left. Another drought left the city dry in 2018.<sup>257</sup> Jakarta, Indonesia is sinking further below sea level because water access is so limited that most inhabitants must dig their own wells: such self-help results in an ever-increasing drain on local aquifers.<sup>258</sup> In Mexico City, Mexico, a mere 20% of the inhabitants have access to water for a few hours every week – as it too continues to sink.<sup>259</sup> Can you wrap your head around moving entire cities – such as Jakarta, Indonesia’s capital – somewhere else?

Cape Town’s city planners can only be partly exonerated from blame for the crisis. After all, the US Central Intelligence Agency predicted it would occur over a decade ago in a 2007 assessment of the most dangerous sources of political instability.<sup>260</sup> In addition, South Africa’s coal dependence means that the government bears significant responsibility

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<sup>253</sup> P Wolski ‘How Severe is the Drought?’ *UCT News* (31 August 2017), accessed at <https://www.news.uct.ac.za/article/-2017-08-31-how-severe-is-the-drought>.

<sup>254</sup> *ibid.*

<sup>255</sup> ‘Water Crisis in Cape Town: A Failure in Governance’ (2018) 2 *The Lancet: Planetary Health* 95.

<sup>256</sup> ‘Running on Empty’ (2018) *Earth Island Journal* 8, 9.

<sup>257</sup> S Ozment & R Feltran-Barbieri ‘Help for São Paulo’s Complex Water Woes: Protect and Restore Forests’ *Water Rights Institute Journal* (25 September 2018), accessed at <https://www.wri.org/2018/09/help-s-o-paulo-s-complex-water-woes-protect-and-restore-forests>:

In 2014, São Paulo nearly ran out of water. Schools closed, crops faltered and reservoirs were left at a tiny 5 % of their capacity for the city and its surrounding population of 22 million. It was the worst drought in eight decades. The dry season of 2018 raised fears of another water crisis. In coming years, warming temperatures will heighten Brazil’s water extremes, making both water scarcity and intense rainfall more common. Managing alternating droughts and floods alongside threats to water quality will be a challenge—one that the city’s existing infrastructure isn’t equipped to handle. São Paulo already loses over 20 % of its treated water due to leaking pipes before it reaches the taps of its residents.

<sup>258</sup> C Ng ‘Why Jakarta is the Fastest Sinking City in the World’ *Channel News Asia* (28 February 2020), accessed at <https://www.channelnewsasia.com/news/cnainsider/why-jakarta-is-world-fastest-sinking-city-floods-climate-change-1247715>: ‘Flood-prone Jakarta is the world’s fastest sinking city – as fast as 10 centimetres per year. In parts of North Jakarta, which is particularly susceptible to flooding, the ground has sunk 2.5 metres in 10 years.’ The country must now decide where and when – not if – to move the nation’s capital.

<sup>259</sup> M Kimmelman ‘Mexico City, Parched and Sinking, Faces a Water Crisis: Climate Change is Threatening to Push a Crowded Capital toward a Breaking Point’ *The New York Times* (17 February 2017), accessed at <https://www.nytimes.com/interactive/2017/02/17/world/americas/mexico-city-sinking.html>.

<sup>260</sup> Even without drought, endogenous and exogenous forces have led us to become a net importer of food, whereas we were once a significant exporter. Prices for basic staples have increased, as they have for all foodstuffs.

for climate change. In short, it's a domestic problem that mirrors similar political inertia in countries around the world.<sup>261</sup>

This book should not be read as arguing that water-saving projects in Cape Town lack value.<sup>262</sup> They were, at least, partly responsible for the postponement, and finally the avoidance, of Day Zero in 2018.<sup>263</sup> However, these plans are a clear example of an end-of-pipe solution – treating the symptoms rather than the cause. Other water management plans exist that fall closer to the cause of the problem. We could be expanding existing dams, clearing alien vegetation, and building desalination plants with real capacity.<sup>264</sup> Each of these water management plans alone, however, will not solve Cape Town's water scarcity if climate change is the primary problem.

### *The Eastern Cape's water crisis and the arrival of Day Zero*

Because Cape Town has garnered such a substantial amount of press, no one appeared to notice that in May of 2017, three districts in the Eastern Cape declared a state of disaster

<sup>261</sup> A Fallon 'A Perfect Storm: The Hydropolitics of Cape Town's Water Crisis' *Global Water Forum* (2018), accessed at <https://globalwaterforum.org/2018/04/17/the-hydropolitics-of-cape-towns-water-crisis-a-perfect-storm/>.

<sup>262</sup> Their value is, however, clearly limited. In 2018, two of Cape Town's upmarket hotels alighted upon a means of addressing the Level 6 Water Restrictions imposed by the City of Cape Town in response to a drought that had entered its fourth year, and which showed no signs of abating. M Charles 'Water Crisis: Hotels Pulls Plug on Water Wastage' *Cape Argus* (14 August 2017). To take a bath one must request a plug at reception. It's a nice gesture, and a nudge for those guests whose natural default is to run a hot bath. Conventional wisdom tells us that showers are substantially more efficient. That ain't always so – especially if one likes more than a six-minute shower. Along with collection systems designed to reuse water from kitchens and rooms in *public* toilets throughout the hotel, and other recycling systems created to use backwashed water in swimming pools, these posh hotels might seem to shine a light on possible solutions to the problem of water scarcity now endemic throughout South Africa. That would be no mean feat, given that 30% of South African municipalities currently have insufficient water to meet the basic needs of their inhabitants. Craemer Media *A Review of South Africa's Water Sector* (2017), accessed at <http://www.craemermedia.co.za/article/water-2017-a-review-of-south-africas-water-sector-pdf-report-2017-08-25>:

'[T]he High Level Panel on Water (HLPW) warned in a statement released on March 21, 2017, that The world might face a 40% water shortfall by 2030, affecting at least 1.80-billion people ... South Africa could become one of these statistics, given that it is considered to be the world's thirtieth-driest country. According to current projections, water demand in South Africa will increase by 1% each year from 15-billion cubic metres a year in 2016 to 18-billion cubic metres in 2030, resulting in a 17% supply deficit. Already, 30% of the country's towns and cities have a water deficit and the situation is expected to be exacerbated by the effects of climate change.

Prior to Cape Town's avoidance of Day Zero in 2018, water shortages were so severe that the usage alert in Cape Town was raised to Level 5. In the event that consumers failed to abide by the restrictions, the City's by-laws granted the municipality the authority to install a water limitation device – with the consumer required to bear the cost. What would this mean for households with actual access to piped water? 20kl per month for individual domestic property usage. That's 21 000 litres. But access to piped water and piped water are two vastly different things. *StatsSA Water and Sanitation Report* (2016).

<sup>263</sup> 'How Cape Town Cancelled Day Zero for 2018 and 2019' *Cape Argus* (28 June 2018), accessed at <https://www.iol.co.za/capeargus/news/listen-everydropcounts-how-cape-cancelled-day-zero-for-2018-and-2019-15730737>.

<sup>264</sup> A recent study found that the most cost-effective way to increase Cape Town's water supply would be a combination of clearing alien vegetation and building a desalination plant. D Crookes 'Does the Construction of a Desalination Plant Necessarily Imply that Water Tariffs Will Increase? A System Dynamics Analysis' (2018) 21 *Water Resources and Economics* 29, 37–38.

due to drought.<sup>265</sup> In January 2019, five dams were at critically low levels,<sup>266</sup> and the dam feeding the major urban centre of Nelson Mandela Metropolitan Municipality dropped by 0.7% in a week, to reach a record low of 25.6%.<sup>267</sup>

That sounds almost manageable.

However, the real story, in a country that's warming at twice the rate of the rest of the world, is that the Eastern Cape has long since passed Day Zero. The Eastern Cape has been Ground Zero for this natural-resource-climate-change driven catastrophe for roughly two years.

In February 2019, one of the largest disaster response NGOs – Gift of the Givers – alighted upon Makhanda (better known to some as Grahamstown.) Gift of Givers thought that it would confront no more than a week-long emergency that could be readily resolved. However, as Kevin Bloom reported in late 2019 (and then again in early 2020), the NGO arrived in the metropole to find that villages and towns in the adjacent Amathole District – population 50 000 – ‘had been without water for several months’<sup>268</sup> and the poorer residents of Makhanda had already taken to the streets in rather futile protest.<sup>269</sup>

Makhanda and the Amathole District are hardly anomalous. The Gamtoos Valley – which has historically produced 50% of South Africa's citrus – is served by the Kouga Dam. Dam levels stood at 7.4% of capacity in 2018, rendering them non-operational.<sup>270</sup> In April 2019, the dam supplying water to the town of Adelaide registered a dirt-dry 1% of capacity.<sup>271</sup> In August 2019, two universities campuses – University of Fort Hare's Alice campus and the Walter Sisulu University's Butterworth campus closed down because of unreliable water supplies,<sup>272</sup> exacerbated by striking municipal workers.<sup>273</sup> At least three other dams had long passed the 15% mark that Cape Town had previously declared to be Day Zero:

- the Xilinx Dam stood at a dusty 5.2% of capacity;
- the Mhlanga Dam was not much better at 6.55% capacity;
- the Nqweba Dam barely burbled at 11.4% of capacity.

<sup>265</sup> M Abdulla ‘The Other Water Crisis: Eastern Cape Is in Serious Danger’ *Mail & Guardian* (29 January 2018), accessed at <https://mg.co.za/article/2018-01-29-the-other-water-crisis-eastern-cape-is-in-serious-danger>.

<sup>266</sup> *ibid.*

<sup>267</sup> D Spies ‘Eastern Cape Water Crisis Deepens’ *News24* (19 January 2018), accessed at <https://www.news24.com/SouthAfrica/News/eastern-cape-water-crisis-deepens-20180119>.

<sup>268</sup> K Bloom ‘Food, Drought and Fury: UN Land Report Brings the Truth to South Africa's Climate Corrupt’ *Daily Maverick* (12 August 2019), accessed at <https://www.dailymaverick.co.za/article/2019-08-12-food-drought-and-fury-un-land-report-brings-the-truth-to-sas-climate-corrupt/>.

<sup>269</sup> L Nowicki ‘Grahamstown Residents Queue For Hours For Water’ *GroundUp* (14 February 2019), accessed at <https://www.groundup.org.za/article/grahamstown-residents-queue-hours-water/>.

<sup>270</sup> M Abdulla ‘The Other Water Crisis: Eastern Cape Is in Serious Danger’ *Mail & Guardian* (29 January 2018), accessed at <https://mg.co.za/article/2018-01-29-the-other-water-crisis-eastern-cape-is-in-serious-danger>.

<sup>271</sup> K Palm ‘Eastern Cape Town in Crisis Mode as Dam Levels Drop to 1%’ *Eyewitness News* (April 2019), accessed at <https://ewn.co.za/2019/04/18/eastern-cape-town-in-crisis-mode-as-dam-water-levels-drop-to-1>. See also ‘The Eastern Cape follows Cape Town in its Water Crisis’ *Automobile Business Review* (2020), accessed at <https://abbrbuzz.co.za/mobility-beat/7416-the-eastern-cape-follows-cape-town-in-its-water-crisis#>.

<sup>272</sup> J Evans ‘Two Eastern Cape University Campuses Closed Over Water Shortages’ *News24* (14 August 2019), accessed at <https://www.news24.com/SouthAfrica/News/two-eastern-cape-university-campuses-closed-over-water-shortages-20190813>.

<sup>273</sup> *ibid.*

In Adelaide, the municipality survived by tapping both boreholes and the Fish River line. A nearby dam could ease matters. However, the cost of such a dam could run up to R2 billion.<sup>274</sup> Only the national government possesses such resources. At the time of writing, the national government has been as non-responsive to the Eastern Cape crisis as it was to the Western Cape emergency.

Nelson Mandela Bay declared Day Zero on 15 September 2020. Intermittent water outages due to lack of water and infrastructure failures had become a way of life over the last two years – for weeks at a time the city ran dry. So bad had the situation become that residents began breaking drains open to secure access to water. Loadshedding had made it impossible for the Nooitgedagt Pump Station to operate – just weeks after a burst pipe at the station had brought operations to a halt. The knock-on effects have been devastating to the local economy. The COEGA Special Economic Zone (SEZ) ground to a halt and the CEO of Nelson Mandela Bay announced that a significant number of business ‘would have to the shut their operations down.’<sup>275</sup> If there’s no money in the national fiscus for basic services, all the talk by experts such as Colin Coleman regarding the creation of SEZs to jump start the economy must answer questions about how we fund greenfield projects and why we should fund them when we cannot maintain our current SEZs.<sup>276</sup>

The COVID-19 pandemic has clearly put an end to plans for a R2 billion dam. That the ANC remains paralysed and lacks the requisite resources to dig the country out of the economic crisis created during the incipient stages of the COVID-19 pandemic suggests that the Eastern Cape’s dire straits will go unaddressed.

Even if it made such concessions, worries persist about who would win tenders for such a massive project. The big bright spot in the Ramaphosa administration after three years appears to be an initial attempt to root out corruption. Unfortunately, COVID-19 relief efforts has required a shuffling of budget priorities. The money to support prosecutions and the courts has already been slashed further:

A budget cut of R1.7bn is being ‘bandied about’ for the already perennially cash-strapped justice sector, and it could potentially cripple key corruption-busting institutions ... ‘If we thought that pre-Covid things were challenging enough, well, it just got exponentially worse,’ National Director of Public Prosecutions Shamila Batohi told the Portfolio Committee on Justice.<sup>277</sup>

<sup>274</sup> K Palm ‘Eastern Cape Town in Crisis Mode as Dam Levels Drop to 1%’ *Eyewitness News* (April 2019), accessed at <https://ewn.co.za/2019/04/18/eastern-cape-town-in-crisis-mode-as-dam-water-levels-drop-to-1>.

<sup>275</sup> K Jacobs ‘Nelson Mandela Bay’s Municipality Declares Day Zero Due to Water Shortages’ *Cape [town] Etc* (16 September 2020), accessed at [www.capetownetc.com](http://www.capetownetc.com).

<sup>276</sup> C Coleman ‘Making South Africa Whole’ *Project Syndicate* (4 September 2020), accessed at [https://www.project-syndicate.org/onpoint/south-africa-economic-growth-plan-by-colin-coleman-2020-08?utm\\_source=Coleman's growth plan begins with a rather bleak caveat](https://www.project-syndicate.org/onpoint/south-africa-economic-growth-plan-by-colin-coleman-2020-08?utm_source=Coleman's%20growth%20plan%20begins%20with%20a%20rather%20bleak%20caveat):

No society can survive with 50% unemployment, yet that is exactly what South Africa [is] facing ... Joblessness alone, exacerbated by the COVID-19 pandemic, has forced the country into a state of economic emergency.

Without water, it’s impossible to understand how SEZs – an integral part of the former Managing Partner of Goldman Sachs’ plan – will get off the ground. The plan, without taking hard facts into account, must be viewed as stillborn.

<sup>277</sup> J Gerber ‘SA’s Corruption Fighters May Be Crippled as Justice Sector Faces Cash Crunch Over Covid-19’ *News24* (25 May 2020), accessed at <https://www.news24.com/SouthAfrica/News/sas-corruption-fighters-may-be-crippled-as-justice-sector-faces-cash-crunch-over-covid-19-20200525>.

One must think of this interaction of political problems – once again – as one wicked problem accelerating two other wicked problems. The decline of a nascent democracy and the costs of mismanagement of the COVID-19 pandemic have had dire consequences for climate change.

That the Eastern Cape is both subject to such uninhabitable conditions and maladministration is hardly surprising. The provincial government has already been previously placed under national administration.<sup>278</sup> As the home to two of apartheid's strategically disadvantaged homelands – the Transkei and the Ciskei – the province's historically impoverished communities have few resources upon which they can draw.<sup>279</sup>

As a quintessentially wicked problem, climate change and water scarcity have had several expected knock-on effects. Subsistence farming – upon which so many of the province's residents rely – has come to a halt. Residents are both thirsty *and* hungry. Problems in wastewater treatment cause diseases to go uncontained and spread rather rapidly.<sup>280</sup> Land use alterations that are a function of water scarcity lead to soil erosion and affect both water quality and quantity.<sup>281</sup> Women and girls experience the deleterious effects of shortages (domestic violence) as a result of discriminatory traditions surrounding the sourcing of water and its distribution.<sup>282</sup> Conditions have deteriorated to such a degree that citizens and their representatives have begun to turn on each other, for example:

- 'lab results have confirmed that a water reservoir in the Eastern Cape has been poisoned'; and
- residents, already on edge, have engaged in violent protests with police and municipal demolition teams over land claims.<sup>283</sup>

The current condition of the Eastern Cape demonstrates that the effects of climate change and resource scarcity can hardly be treated as hypotheticals. To put it bluntly: *drought has brought about a breakdown in the social contract*. The rest of South Africa can expect more

<sup>278</sup> Limpopo has experienced similar problems with water shortages and maladministration. In 2015, the Centre for Applied Legal Studies (CALS), acting on behalf of residents of Elandsdraai, Morarela, Mbuluzini, Tsansabela and Dichoeng (Flagship Boshielo West), secured a court order requiring the province to provide 'sufficient potable water' through fixing infrastructure and twice-a-week delivery by truck. 'Case Study: Concerned Residents of Flag Boshielo West and Others v Sekhukhune District Municipality and Another' *Centre for Applied Legal Studies* (2015), accessed at <https://www.wits.ac.za/cals/our-programmes/basic-services/water-and-sanitation/>. Despite the initial victory, CALS has returned to court on four further occasions. As of August 2020, it had not secured sustainable provision of potable water for residents of Flagship Boshielo West. T Broughton 'Still No Water in Limpopo Villages after Five Court Orders' *Daily Maverick* (5 August 2020), accessed at [https://www.dailymaverick.co.za/article/2020-08-05-still-no-water-in-limpopo-villages-after-five-court-orders/?tl\\_inbound=1](https://www.dailymaverick.co.za/article/2020-08-05-still-no-water-in-limpopo-villages-after-five-court-orders/?tl_inbound=1).

<sup>279</sup> L Nowicki 'Grahamstown Residents Queue for Hours for Water' *GroundUp* (14 February 2019), accessed at <https://www.groundup.org.za/article/grahamstown-residents-queue-hours-water/>.

<sup>280</sup> S Gusha *Production of High Quality Wastewater Final Effluents Remain a Challenge in the Eastern Cape Province of South Africa* (Unpublished MSc Thesis, University of Fort Hare, 2012).

<sup>281</sup> V de Haan *The Effects of Erosion-control Structures and Gully Erosion on Groundwater Dynamics Along the Kromrivier, Eastern Cape, South Africa* (Unpublished Master's thesis, Stockholm University, 2016).

<sup>282</sup> T Meyiwa, T Maseti, S Ngubane, T Letsekha & C Rozani 'Women in Selected Rural Municipalities: Resilience and Agency against Vulnerabilities to Climate Change' (2014) 28(3) *Agenda: Empowering Women for Gender Equity* 102.

<sup>283</sup> L Daniel 'Poison Detected in Eastern Cape Water Reservoir, Fingers Point to Protestors' *The South African* (2 July 2019).

of the same, given the current absence of political will in addressing these apocalyptic conditions and the acceleration of climate change throughout the country.

We can play the acceleration game one more time in the Eastern Cape. The deadly distraction of the current COVID-19 pandemic – with lockdowns and increasing levels of unemployment that interact with democratic decline – demonstrates once again how one wicked problem so often acts as an accelerant with respect to other wicked problems.

Indeed, while many see this pandemic as an opportunity to give climate change greater attention, the more likely scenario is that the ongoing COVID-19 pandemic (with no clear end in sight) will generate perverse behavioural responses by the public and drain the economic resources of most democracies in the near to medium term as these countries struggle to cope with wave after wave of new infections. As Gavin Davies explains:<sup>284</sup>

[T]he persistent failure of governments in the major western democracies to control the pandemic has lessons for the future, particularly for our efforts to tackle climate change. Public resistance to lockdown measures made early and strict restrictions, accompanied by effective test, trace and isolation policies, politically infeasible in most of Europe and the US all year ... Opposition to enforced lockdowns in the major western countries is to some extent based on a ... belief in economic freedom ... Furthermore, public support for strict measures has been eroded by serious operational failings. Political opinion has also been moulded by the epidemiological and economic characteristics of this pandemic, which are particularly challenging. Infectious diseases in their initial stages tend to grow at exponential rates. For example, if they double every three days, they will increase a thousand-fold within a month, unless slowed down by social distancing or herd immunity. But human beings struggle to grasp that idea and, instead, tend to assume that the number of cases will grow by the same absolute number each day, leading them to underestimate the danger. This exponential growth fallacy is a well-known feature of human behaviour, including in people who are trained to avoid it. The natural time lag between cases, hospitalisations and then deaths further exacerbates the tendency to wait too long before announcing policy restrictions. Another issue, very familiar to economists, is the pervasive role that externalities have played in the spread of coronavirus. When an infectious person fails to self-isolate, many other people are placed at risk of disease and thus bear the costs of this individual's decision. This should present a watertight case for public intervention to enforce social distancing and isolation, especially after positive tests. Further complicating the response for democracies has been the argument over how to weigh the health benefits of lockdowns and social distancing against the economic costs. Over short periods, the two do conflict, but ... this is not true in the longer term. That's because a decision to avoid lockdowns today is likely to lead to exponential growth in cases in the future, resulting in more stringent restrictions, and greater damage to businesses. Considered dynamically, both health and the economy eventually benefit from early and decisive virus control. The failure of most western democracies to accept these arguments for early restrictions demonstrates the potency of the behavioural biases involved ... The arrival of effective vaccines [will likely] mean that US president-elect Joe Biden will soon be able

<sup>284</sup> G Davies 'Democracies that Failed the Covid Test Will Struggle on Climate Change: Efforts to Address Both Issues are Hampered by Externalities and Behavioural Biases' *Financial Times* (15 November 2020), accessed at <https://www.ft.com/content/794eda4e-8195-4263-9ccd-8b87fcb74440>; 'FDA Expert Panel Endorses Moderna Coronavirus Vaccine, WAVY News (17 December 2020), accessed at <https://www.wavy.com/news/health/coronavirus/live-fda-to-review-modernas-request-for-emergency-use-of-coronavirus-vaccine/>. See also D Mancini, S Neville & H Kuchlar 'Moderna's Covid Jab Shows 94.5% Efficacy in Clinical Trials' *Financial Times* (16 November 2020). A second set of interim positive results in eight days raised hopes that vaccines would ultimately be effective.

to focus beyond the virus. But it is obvious that the problems ... that plagued responses to Covid-19 ... apply to his other ... focus, climate change. The effects of climate change also increase exponentially, albeit over a much longer period than a pandemic. Time lags between cause and effect are very lengthy, making interpretation obscure to the public. Externalities are unavoidable, and apply across international borders, making them even harder to address. Human biases leave us systematically underprepared to address serious but remote risks. The climate problem is therefore even less suited to ... [market-based] solutions than Covid-19. America's promised return to the Paris Accord is the first and necessary step on a very long road. No one has thought of a magic bullet for global warming, equivalent to a vaccine against Covid-19. This problem will have to be solved the hard way.

The hard part, as I noted at the outset of this chapter, is moving people away from negative defaults to positive heuristics.

*South Africa's nascent energy revolution and political paralysis*

In the previous sections, we established that South Africa's energy production systems are: drivers of climate change, not to mention ill-health; contribute to climate change as a wicked problem; bleed into and exacerbate other wicked problems. Loadshedding accelerates permanent unemployment; water scarcity has already begun and population movements destabilise the entire country.

The most obvious solution to South Africa's energy production problem is to close down coal-fired power stations and start generating more renewable energy. The country has, in the past, made some small moves in that direction. It produced minimum emissions standards (MES) published by the Minister of Water and Environmental Affairs in 2010.<sup>285</sup> However, the legislation allowed for *unlimited* postponements of compliance with the MES.<sup>286</sup> Eskom – the parastatal that generates about 95% of the energy in the country, and 45% of the energy on the continent<sup>287</sup> – used this loophole to avoid any meaningful attempt at compliance. It merely applied for 'rolling postponements'.<sup>288</sup> A significant number of these requests reflect bad faith and corruption. Between extremely dodgy tenders for coal and a workforce three times the necessary size, the significant costs associated with meeting the MES<sup>289</sup> could not be borne by a state-owned utility saddled with R500 billion in debt and with no hope of a government bailout.

Even with the closure of the loophole,<sup>290</sup> it's hard to conceive of how Eskom would close five coal-fired power stations in the next ten years in order to meet the MES.<sup>291</sup>

<sup>285</sup> These standards accord with the schedule for s21 of the National Environmental Management: Air Quality Act 39 of 2004.

<sup>286</sup> National Environmental Management: Air Quality Act 39 of 2004 at s6.

<sup>287</sup> 'System Adequacy Reports' Eskom, accessed at <http://www.eskom.co.za/Whatweredoing/SupplyStatus/Pages/SupplyStatusT.aspx>.

<sup>288</sup> 'South African Air Quality At Risk If Eskom Gets Its Way' *eNCA* (12 February 2014), accessed at <https://www.enca.com/south-africa/south-african-air-quality-risk-if-eskom-gets-its-way>.

<sup>289</sup> R Hugo & S Kamanja 'Eskom's Disdain for Deadlines "Kills Thousands"' *Mail & Guardian* (21 February 2014), accessed at <https://mg.co.za/article/2014-02-20-eskoms-disdain-for-deadlines-kills-thousands>.

<sup>290</sup> Paragraph 11 in the Air Quality Amendment Act, published in 2018, requires a suspension application to be accompanied by a decommissioning schedule.

<sup>291</sup> Were it only so easy. Eskom currently lacks the financial capacity to meet the incredibly expensive commitment to decommission its plants. But see CGTN Africa 'Eskom to Close Five Power Stations in 10 years' *Infrastructure News and Service Delivery* (28 March 2017), accessed at <http://www.infrastructurene>.

Extended loadshedding periods reached a hitherto unheard of Stage 6 in late 2019 and then Stage 8 in early 2020 due to 12 years of ANC-led government mismanagement and corruption – of which crumbling infrastructure and the purchase of sub-standard coal are mere symptoms.<sup>292</sup> (Loadshedding resumed in September 2020 as businesses began to conduct operations at roughly normal capacity under Lockdown Level 1.) Eskom's ongoing resistance to purchasing private power or to allow independent private power to bridge the gaps in both the public sector and the private sector is no longer the primary problem after 12 years of loadshedding. Mineral Resources and Energy Minister Gwede Mantashe has finally signed Section 34 determinations. These determinations enable municipalities to secure electricity from independent power producers.<sup>293</sup> President Ramaphosa had given Minister Mantashe's initial recalcitrance cover by asserting, without a plausible factual predicate, that the Stage 6 outages that led to South Africa's second recession in two years were a function of criminal behaviour.<sup>294</sup> That canard reaches all the way back into President Mbeki's playbook and the ANC-led government's initial excuses for loadshedding.

The government's problems do not end there. The Congress of South African Trade Unions (COSATU) continues to oppose unbundling Eskom, though it reversed course

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ws/2017/03/28/eskom-to-close-five-coal-fire-power-stations-in-10-years/; A Gibbs 'Air Quality Rules May Force Eskom to Close Power Stations' *EE Publishers* (26 June 2018), accessed at <http://www.ee.co.za/article/air-quality-rules-may-force-eskom-to-close-power-stations.html>.

<sup>292</sup> E Stoddard 'Economic Data for SA Isn't Shooting the Lights Out – and That's Before Load Shedding Stage 6' *Business Maverick* (13 December 2019), accessed at <https://www.dailymaverick.co.za/article/2019-12-13-economic-data-for-sa-isnt-shooting-the-lights-out-and-thats-before-load-shedding-stage-6/>: 'The data so far for South Africa's fourth quarter, which reflects pre-stage 6 load shedding, suggests that even without Eskom, the economy is probably in a recession.' If things were already bad, the contraction of the economy in December 2019 due to level 6 load-shedding only made them worse.

<sup>293</sup> S Grootes 'Power Failure: Red Tape (and Gwede Mantashe) are Keeping Us in the Dark' *Daily Maverick* (11 December 2019), accessed at <https://www.dailymaverick.co.za/article/2019-12-11-power-failure-red-tape-and-gwede-mantashe-are-keeping-us-in-the-dark>. Grootes writes:

[T]he most astonishing piece of information is ... [the amount of] electricity ... being produced right now in South Africa that is not being used. Ntombifuthi Ntuli, CEO of the Wind Energy Association, has [noted] that: 'We have wind farms producing electricity that is not being fully used during Stage 6 load shedding.' There appears to be a similar situation with solar plants. Solar plants have signed agreements with Eskom which will determine the amount of electricity the power utility will buy from them ... Energy expert Chris Yelland estimates that there could be thousands of small-scale power generation facilities (mainly solar power) in shopping centres, parking lots and homes within just 12 months. The main factor holding them back is the paperwork to get them up and running. The second, more medium-term option, Yelland says, is utility-scale production, involving independent power producers (IPPs). These ... include solar and wind power projects.

Courts could be asked to resolve sclerotic blockages in the political system. When a failure to cooperate between ostensibly co-operative spheres of government exists, and once all political processes for reconciliation have been exhausted, both Chapter 3 of the Constitution and the Intergovernmental Relations Framework Act 13 of 2005 enable political entities to seek recourse in the courts. S Woolman 'Co-operative Government & Intergovernmental Relations' in S Woolman & M Bishop (eds) *Constitutional Law of South Africa* (2nd Edition, RS1, 2009) Chapter 14.

<sup>294</sup> M Merten 'How to Destroy a Country: Government Edition' *Business Maverick* (14 December 2019), accessed at <https://www.dailymaverick.co.za/article/2019-12-13-how-to-destroy-a-country-government-edition/>:

It would be easy to blame Eskom – its R440-billion debt has government by the short and curlies – but that would be an unhelpful shortcut. At the centre of South Africa's slow slide into obliteration is a toxic vortex of politics, politicking and persistent governance failures.

briefly after the May 2019 elections. As for the judiciary's involvement, the National Union of Metalworkers of South Africa (NUMSA) sought to interdict Eskom from signing 27 renewable energy contracts with IPPs. This action was ultimately rejected in court.<sup>295</sup>

Trade union members fear that the unbundling of Eskom will lead to retrenchments.<sup>296</sup> Eskom itself has pushed back on buying energy from renewable IPPs or from private owners of solar and wind power who wish to place excess supply back on to the grid, ostensibly, because its own coal-based energy is far cheaper.<sup>297</sup> (Given its debt, the poor quality of coal and the costs of repairing broken down plants, and the inability to build its own renewables, the resistance to private sources of power and privately held renewable powers defies a plausible explanation.) However, the wicked problem of climate change cannot be solved by continuing to burn coal. The absence of any clear political consensus – amongst members of the same tripartite alliance – is indicative not just of a problem of collective action, but of why, on a planet of close to eight billion people, meaningful consensus is difficult to reach.

*So, can we fix it?*

While a number of new technologies 'could' assist us, such as low-carbon elephant grass fuel,<sup>298</sup> or edible protein produced from air and electricity,<sup>299</sup> we currently lack a plausible 'one-shot' candidate to roll-back global warming.<sup>300</sup> Most one-shot candidates are a decade from being rolled out and are so expensive that an extensive amount of global/multilateral cooperation among states would be required. One-shot solutions such as using merchant ships to fertilise much of the ocean with iron in order to create CO<sub>2</sub>-eating algae

<sup>295</sup> L Omarjee & J Cronje 'Court Rejects Numsa's Urgent Bid to Block IPP Signing' *Fin24* (29 March 2018), accessed at <https://www.fin24.com/Economy/Eskom/court-rejects-numsas-urgent-bid-to-block-ipp-signing-20180329>.

<sup>296</sup> *ibid.*

<sup>297</sup> J Styan 'Eskom and the Dilemma with Independent Power Producers' *Finweek* (18 August 2016).

<sup>298</sup> 'New Kid On The Block: Elephant Grass Could Take Role of Coal and Oil' *ESI Africa* (27 November 2018), accessed at <https://www.esi-africa.com/regional-news/international/new-kid-on-the-block-elephant-grass-could-take-role-of-coal-and-oil/>.

<sup>299</sup> 'Solar Foods Oy Gets Two-million Euros in Start-up Funding for Producing Food Out of Air' *Solar Foods* (2019), accessed at <https://solarfoods.fi/>.

<sup>300</sup> Suggestions for more moderately expensive one-shot problems abound. Professor Steven Salter asserts that: a geoengineering technique called 'marine cloud brightening' that makes marine Stratocumulus clouds – which currently reflect almost 30% of total Solar radiation back into space – whiter, [could] caus[e] them to reflect more sunlight away from earth ... Salter ... a well-known 1970s wave and tidal power pioneer, has designed an unmanned hydro-foil ship, computer-controlled and wind-powered, which pumps an ultra-fine mist of sea salt toward the cloud layer, causing it to turn white: 'Spraying about 10 cubic meters per second could undo all the [global warming] damage we've done to the world up until now,' Salter claims. And, he says, the annual cost could be less than the cost to host the annual UN Climate Conference – [roughly] \$200 million each year. Salter calculates that a fleet of 300 of his autonomous ships could reduce global temperatures by 1.5 °C. He also believes that smaller fleets could be deployed to counter-act regional extreme weather events.

'\$200 Million Dollars a Year Could Reverse Climate Change' *BBC News* (February 28, 2019), accessed at <https://science.slashdot.org/story/19/02/28/2336231>.

While such proposals abound, the techniques themselves remain unproven. Normally, each proposal would require at least some degree of longitudinal study as well as significant backing. The numerous choices, the expense of each and the lack of coordination perpetuate the wickedness of the problem.

blooms or seeding the stratosphere with sulphur dioxide appear to be a decade away and remain untested and could have (as their proponents concede) significant unintended consequences.<sup>301</sup> The timeline and the requisite international cooperation required turn normal problems of collective action into wicked problems.

We have established technologies that use sun, wind or natural gas. But again, as with most wicked problems, no consensus exists on the best path to be taken. Following the Fukushima nuclear disaster, Japan and Germany made a decisive move away from nuclear energy, while the UK and France did not.<sup>302</sup> Renewable energy may appear generally less controversial, but there are still fierce debates surrounding the cost and competitiveness of wind energy.<sup>303</sup> Many large-scale renewables are *extremely* energy intensive (and technologically challenging) to build. As water experts note:

Technology advances for desalination are not going to change the fundamental factors: it requires a lot of electricity, it generates a lot of concentrated salty water, its cost will always be high compared with readily available surface water sources, there is the risk that a return to normal precipitation will make it unnecessary for the duration of plenty, and by the time drought conditions return the particular type of reverse osmosis technology used might be obsolete.<sup>304</sup>

It's worth noting, again, that the price point for solar and wind power has dropped roughly 40% since 2010 and that both forms of energy are often less expensive than the continued use of coal. Micro-grids are gaining traction – particularly in areas of low energy access. This form of energy system may be particularly useful for households.<sup>305</sup> However, these end-users are hardly the end-users with the biggest carbon footprint.

The consequences of increased demand for energy created by a growing population and the lack of supply of renewables are often most keenly felt in the developing world.<sup>306</sup>

<sup>301</sup> M Sutton 'Climate Change Means Geoengineering under Pressure to Keep Our CO<sub>2</sub> Budgets under Control' *ABC Science* (7 October 2019), accessed at <https://www.abc.net.au/news/science/2019-10-07/scientists-warn-we-have-10-years-to-start-removing-co2/11563584>.

<sup>302</sup> B Wittneben 'The Impact of the Fukushima Nuclear Accident on European Energy Policy' (2012) 15 *Environmental Science and Policy* 1, 1–3.

<sup>303</sup> J DeCarolis, D Keith, M Jacobson & G Masters 'The Real Cost of Wind Energy' (2001) 294 (5544) *Science* 1000–1003.

<sup>304</sup> Water Resources Group *Charting Our Water Future* (2009).

<sup>305</sup> C Kirubi, A Jacobson, D Kammen & A Mills 'Community-Based Electric Micro-Grids Can Contribute to Rural Development: Evidence From Kenya' (2009) 37 *World Development* 1208.

<sup>306</sup> N Diffenbaugh & M Burke 'Global Warming has Increased Global Economic Inequality' (2019) 116(20) *Proceedings of the National Academy of Sciences of the United States of America* 9813:

Understanding the causes of economic inequality is critical for achieving equitable economic development. To investigate whether global warming has affected the recent evolution of inequality, we combine counterfactual historical temperature trajectories from a suite of global climate models with extensively replicated empirical evidence of the relationship between historical temperature fluctuations and economic growth. Together, these allow us to generate probabilistic country-level estimates of the influence of anthropogenic climate forcing on historical economic output. We find very high likelihood that anthropogenic climate forcing has increased economic inequality between countries. For example, per capita gross domestic product (GDP) has been reduced 17–31% at the poorest four deciles of the population-weighted country-level per capita GDP distribution, yielding a ratio between the top and bottom deciles that is 25% larger than in a world without global warming. As a result, although between-country inequality has decreased over the past half century, there is ~90% likelihood that global warming has slowed that decrease. The primary driver is the parabolic relationship between temperature and economic growth, with warming increasing growth in cool countries and decreasing

One response has been extreme ‘loadshedding’. In both South Africa and the Democratic Republic of Congo, rotational power cuts ease the pressure on the grid and scheduled power cuts have become an accepted part of ordinary life.<sup>307</sup> However, these cuts are hardly desirable and have little to do with responses to climate change. In South Africa, the policy has significantly decreased productivity.<sup>308</sup> It can also be directly linked to the recession of 2019, first quarter contraction in 2020 and the downgrade of South Africa’s economy to junk status by Moody’s in March 2020. Further, it interferes with the provisions of health services.<sup>309</sup> Moreover, power cuts have been shown to increase deforestation and the use of biomass fuels. Those effects, in turn, increase carbon emissions.<sup>310</sup> What happens when, as now, loadshedding rises to an unprecedented level 8 – in which any given location receives 12 hours of power, must make do with 12 hours without power, and the announced schedules for outages do not cohere with actual outages themselves? It’s a recipe for chaos.

Can we solve this wicked problem? In the absence of political will, a genuine sense of crisis, and adequate technology, the answer might seem to be ‘no’. But that answer is hardly definitive. New and cheaper green technologies have already appeared. Truly critical crises may engender changes in behaviour. But as of late 2020, we have not seen sufficient signs of either response to this super-wicked problem.

To see the impediments to meaningful climate change protocols, one need look no further than the European Union. This well-developed constellation of nations has committed itself to using 25% of its annual fiscus to making the continent carbon neutral by 2050.<sup>311</sup> Not chump change and quite a bold plan. But Brussels has a problem. Almost 40% of the fiscus is allocated to farm subsidies that accelerate climate change and pollution. Moreover, Poland, a coal-rich country, has refused both to renounce its reliance on coal

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growth in warm countries. Although there is uncertainty in whether historical warming has benefited some temperate, rich countries, for most poor countries there is >90% likelihood that per capita GDP is lower today than if global warming had not occurred. Thus, our results show that, in addition to not sharing equally in the direct benefits of fossil fuel use, many poor countries have been significantly harmed by the warming arising from wealthy countries’ energy consumption.

See also A King & L Harrington ‘The Inequality of Climate Change From 1.5 To 2°C of Global Warming’ (2018) 45 *Geophysical Research Letters* 5030; T Carleton & S Hsiang ‘Social and Economic Impacts of Climate’ (2016) 353 *Science* 9837; L Harrington et al. (2016) ‘Poorest Countries Experience Earlier Anthropogenic Emergence of Daily Temperature Extremes’ (2016) 11 *Environmental Research Letters* 55007; M Dell, B Jones & B Olken ‘What Do We Learn from the Weather? The New Climate-Economy Literature’ (2014) 52 *Journal of Economic Literature* 740.

<sup>307</sup> R Krüger *Watering Down Justice: Energy Justice in the Inga Dams Case in the DRC* (Unpublished MSc thesis, Lund University, Sweden, 2017) 25.

<sup>308</sup> Steenkamp, A February, J September, A Taylor, S Hollis-Turner & J Bruwer ‘The Influence of Load Shedding on the Productivity of Hotel Staff in Cape Town, South Africa’ (2016) 4(2) *Expert Journal of Business and Management* 69.

<sup>309</sup> C Gehringer, H Rode & M Schomaker ‘The Effect of Electrical Load Shedding on Paediatric Hospital Admissions in South Africa’ (2018) 29(6) *Epidemiology* 841.

<sup>310</sup> A Tanner & A Johnston ‘The Impact of Rural Electric Access on Deforestation Rates’ (2017) 94 *World Development* 174; R Krüger *Watering Down Energy Justice in the Inga Dams Case in the DRC* (Unpublished MSc thesis, Lund University, Sweden, 2017) 25.

<sup>311</sup> T Wyatt ‘EU Commits to Being Carbon Neutral by 2050, But Gives Poland Exemption’ *The Independent* (16 December 2019), accessed at <https://www.independent.co.uk/news/world/europe/eu-climate-change-carbon-emissions-net-zero-2050-poland-a9245521.html>.

and to take responsibility for the farm-generated effluents that have killed much of the aquatic life in the adjacent Baltic Sea.

To sound a more local note, one can hear (and see) the spectre of a genuine humanitarian disaster in Zimbabwe. Between severe drought and decades of plutocracy, the best that the finance minister, Mtuli Ncube, can do is offer subsidies for mealie meal.<sup>312</sup> (There's nothing else to eat – and even the delivery of mealie meal has become fraught with corruption.)<sup>313</sup> At 300% annual inflation, Zimbabwe has no choice but to beg the United Nations for humanitarian relief.<sup>314</sup>

### G. Wicked Problem 3 – Virus X, Pandemics and COVID-19

As I noted at great length in the Prologue, the penultimate draft of this work (presented in mid-November 2019 in New York, at Penny Andrews' New York Law School's SA Reading Group) concluded with a discussion of a wicked problem immediately on the horizon: a deadly and debilitating virus capable of worldwide transmission. In short, I described a global pandemic, and the conditions that made the world ripe for that pandemic. All of you know it now as COVID-19 – and it will be with us in South Africa (that produced its own more transmissible and virulent variant of SAR-CoV-2) for some time. Even the most cautiously optimistic politicians and public health officials in the US believe that a successful vaccine programme will take quite some time to bring the pandemic under some semblance of control now that approved vaccines must contend with variants that evade control.

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<sup>312</sup> A full page spread on page 4 of *The New York Times* in December 2019 announced what everyone already knew. J Moyo & R Gladstone 'Fears Build that Zimbabwe Has Famine in Its Future: Worst Hunger Crisis in Southern Africa' *The New York Times* (26 December 2019).

<sup>313</sup> *ibid.* Mealie meal has become the equivalent of water in Mexico City – erratic, and subject to extortion as well as sexual depredations (succumb to survive). Sometimes the aid just vanishes.

<sup>314</sup> *ibid.* There's a lesson beyond Zimbabwe that stretches across the continent. Poor governance, fragmentation/failure of the nation state, vestiges of old order colonialism as well as China's new colonialism and the impotence of African multilateral institutions has left a large portion of the continent's population living in extreme poverty. That's 36 rupees or \$1 a day. During a discussion of the 2015 Millennium Development Goals (MDGs) on National Public Radio (NPR), my former boss (Dean of both the Faculty of Commerce, Law and Management and Director of the Wits Business School at the University of the Witwatersrand) and then Oxford Professor and Director of the African Bank, was asked when he thought the 54 nations on the continent could be expected – *ceterus paribus* – to eliminate extreme poverty. (It was well-known that China alone was responsible for 90% of the MDGs regarding extreme poverty and the elimination of roughly 90% of its own extreme poverty.) '2030?' Mthuli replied 'No.' '2040?' 'No.' '2050?' 'No.' '2060?' '*Ceterus paribus* – Yes.' Unlike China, a state that could apply its jackboot to 1.4 billion denizens, the 54 nations on the African continent lack such ease of policy coordination. As for '*ceterus paribus*' – it assumed that the continent would not be faced with other problems that would undermine attempts at the realisation of the kinds of cooperation and development that the MDGs and now the Sustainable Development Goals (SDGs) require. Mthuli had returned to Zimbabwe, as promised, after a modicum of regime change. He suffered under no illusions about the steeply graded mountain that he would have to climb – if he could reach the summit at all. Mealie meal subsidies are certainly better than nothing at all. It's an approach that we rehearse during the concluding discussion of 'doing the best we can' to do justice under suboptimal circumstances.

*A brief history of pandemics*

Ever since humans began to farm, herd livestock, and pass on their assets to future generations, some degree of economic inequality has appeared in all civilisations. Rulers accumulated slaves, women, baubles, trinkets, land, armies to govern their territory and other trappings of wealth that could be passed down to inheritors of the throne. But not until the Spanish Empire, did the ruling class think to melt gold down into ingots that could be accumulated and used to fund the further expansion, further enrichment and further entrenchment of the empire itself generation after generation.

But over the first several millennia of human civilisation, if the inequality of ruler and ruled disappeared, it generally did so as a result of violent events ... or pandemics. The loathsome European national project only arose (in a small number of places) in the 16th century after plagues and a mini-Ice Age. Empires came. Empires disappeared. Leaving in their wake castles and ruins – but nothing much here by way of accumulation of wealth.

Only within the last two centuries have states, along with individuals and juristic persons, ‘learned’ how to accumulate wealth, reinvest it, and grow wealthier still. Only within the last century and change have we proved successful in negotiating – through democratic processes – more egalitarian societies and regime change. But while we may have had a conscious hand in ending the first gilded age, credit should really go to the ‘Four Horsemen of the Apocalypse’ – warfare, transformative revolutions, state collapse and catastrophic plagues/pandemics. These rather poorly managed events have repeatedly proven the most successful (if unintentional) means of destroying the fortunes of the rich and the powerful, while delivering the conditions of rough political and economic egalitarianism that marked liberal (constitutional) democracies from the 1930s to the 1980s. I’m not suggesting a second dose of Four Horsemen. I’m only noting how much easier it is to restore egalitarianism by levelling down.<sup>315</sup>

We had avoided catastrophic plagues through almost two decades of the 21st century. No Spanish Flu or Bubonic Plague or Cocoliztli had yet appeared. But the World Health Organization anticipated and sounded alarms regarding similar pathogens for over two decades:

At least 30 new diseases have emerged in the last 20 years and now together threaten the health of hundreds of millions of people. For many of these diseases, there is no treatment, cure or vaccine. ‘We are standing on the brink of a global crisis in infectious diseases. No country is safe from them. No country can any longer afford to ignore their threat,’ the Director-General of WHO, Dr Hiroshi Nakajima, [said] in the report.<sup>316</sup>

Twenty years later, the WHO produced an almost definitive list of pathogens which can spread and kill rapidly without proper research and enhanced containment:<sup>317</sup>

- Crimean-Congo Haemorrhagic Fever (CCHF)
- Ebola Virus Disease and Marburg Virus Disease
- Lassa Fever

<sup>315</sup> D Broom ‘These are the World’s Most Fragile States in 2019’ World Economic Forum (15 April 2019), accessed at <https://www.weforum.org/agenda/2019/04/most-fragile-states-in-2019>.

<sup>316</sup> World Health Organization *Infectious Diseases Kill over 17 Million People a Year: WHO Warns of a Global Crisis* (1996).

<sup>317</sup> World Health Organization *Deadly Diseases that Require Further Research and Containment* (6-7 February 2018).

- Middle East Respiratory Syndrome Coronavirus (MERS-CoV)
- Severe Acute Respiratory Syndrome (SARS)
- Nipah and Henipaviral Diseases
- Rift Valley Fever (RVF)
- Zika
- Disease X.

Disease X:<sup>318</sup> I wrote in the penultimate draft of this book in November 2019 as follows:

A high probability exists that the next big epidemic will come, reasonably soon, from a completely unexpected source, a pathogen that has not yet revealed itself. Just as we have seen in prior discussions of systems breakdowns with respect to such wicked problems as nuclear weapons, climate change and mass unemployment, most epidemics primarily flow from broken healthcare systems or poor policy choices rather than specific pathogens. It's broken or impoverished national healthcare programmes – and the absence of multinational healthcare system – that enable a pathogen to grow from an isolated cohort of cases to a worldwide epidemic.<sup>319</sup>

Not long after the time of writing in November 2019, and a couple years after I penned the above prediction, this 'notional' pandemic revealed itself as COVID-19.

*Here we are again – how we arrived at a second wave*

SARS-CoV-2 may never go away, especially if variants continue to escape control via vaccination and the body's own innate immune response.<sup>320</sup> South Africa may be years

<sup>318</sup> B Lee 'Disease X Is What May Become the Biggest Infectious Threat to Our World' *Forbes* (10 March 2018), accessed at <https://www.forbes.com/sites/brucelee/2018/03/10/disease-x-is-what-may-become-the-biggest-infectious-threat-to-our-world/?sh=423b37ca2cd7>.

<sup>319</sup> According to the WHO, stopping Disease X would require better (a) surveillance systems that can detect something out of the ordinary – from changes in animal behaviour, or new patterns of healthcare-seeking behaviour among human beings; (b) healthcare systems across the planet to ensure that diseases are caught and controlled quickly before they spread; (c) national and international financial systems that allocate funds to combat an epidemic and to develop a new biotechnologies that address a broader set of possible diseases; (d) research budgets that enable countries and companies to more rapidly develop new vaccines, medications, and other technologies to combat an emerging epidemic – though in an age of austerity government funding for scientific research has virtually dried up. World Health Organization *Deadly Diseases that Require Further Research and Containment* (6–7 February 2018). Well that didn't happen. The drumbeats just got louder and louder. Johns Hopkins Center for Health Security *Preparedness for a High-Impact Respiratory Pathogen Pandemic* (September 2019):

Were a high-impact respiratory pathogen to emerge, either naturally or as the result of accidental or deliberate release, it would likely have significant public health, economic, social, and political consequences. Novel high-impact respiratory pathogens have a combination of qualities that contribute to their potential to initiate a pandemic. The combined possibilities of short incubation periods and asymptomatic spread can result in very small windows for interrupting transmission, making such an outbreak difficult to contain.

Nuclear Threat Initiative, the Johns Hopkins Center for Health Security & The Economist Intelligence Unit *Global Health Security Index* (October 2019). The report on 195 nations concluded, in a manner that the multiple authors later admitted radically underestimated the danger, that: 'National health security is fundamentally weak around the world ... No country is fully prepared for epidemics or pandemics, and every country has important gaps to address.'

<sup>320</sup> W Wan & C Johnson 'Coronavirus May Never Go Away, Even with a Vaccine' *The Washington Post* (28 May 2020), accessed at <https://www.washingtonpost.com/health/2020/05/27/>; J Dan et al. 'Immunological Memory to SARS-CoV-2 Assessed for Greater than Six Months After Infection' [2020] *bioRxiv* (15

away from access to adequate vaccine – even as vaccines are slowly rolled out in late 2020 and early 2021. Treatments for severe cases in hospitals are still limited to dexamethasone and oxygen at very high doses.

Despite the long Prologue to this book, I moved part of this book’s earlier iteration, largely unvarnished, here (above and below). My purpose is threefold.

First, despite expert advice, the government has done very little to protect its citizens from the COVID-19 pandemic. Not long after South Africa claimed the fifth-highest number of infections in the world, the government stopped efforts to test at a rate that would provide useful information. Those same experts realised as early as May 2020 that the government would likely make good on few of its COVID-19 related promises, and that the initial lockdown would make no difference in the rate or the extent of transmission. Given the choice between serving the rest of South Africa’s rather dire healthcare needs – from HIV to TB – and preventing mass hunger and starvation, those same public healthcare officials urged (in May 2020) that the lockdown should go immediately from Level 5 to Level 1. Instead, the government gave us five months of theatre and magical thinking – as well as a devastated economy that dramatically increased unemployment and pushed 50% of the population to the food poverty line. Its desire to look good and induce false hope gave us a cooked book of 650 000 confirmed cases. The actual infection figure of between 12 and 13 million by late August 2020 – based on reputable figures from the South African Medical Research Council and Discovery Health, and subsequently recognised by the Department and the Minister of Health – were absolutely consistent with epidemiological projections made in March 2020. The government’s response: in addition to bringing testing to a virtual halt in August 2020,<sup>321</sup> it fired its expert immunologists, epidemiologists and public health officials in September 2020. Within weeks of the massacre of those who willingly spoke truth to power, both the experts and the Gauteng and Western Cape Departments of Health warned of a second wave.<sup>322</sup> But while the carnage in the Eastern Cape could not be ignored, the government would not officially recognise the existence of a second wave for another two months. First it existed, then it did not.

Second, I want most South African readers, and readers elsewhere, to feel trapped. I want most of you to know that there’s no place that you can run, no place you can hide. More importantly, the narrative in the Prologue was meant, without the jargon, to give you a better sense of what a wicked problem is and one that you have actually experienced (global in nature, as well as an international and domestic failure). You, the reader, know

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November 2020), accessed at <https://www.biorxiv.org/content/10.1101/2020.11.15.383323v1>; I Schulien et al. ‘Characterization of Pre-existing and Induced SARS-CoV-2-specific CD8+ T Cells’ [2020] *Nature Medicine* (12 November 2020), accessed at <https://www.nature.com/articles/s41591-020-01143-2>.

<sup>321</sup> Official statistics can be found at <https://www.worldometers.info/coronavirus/#countries>. However, South Africa’s numbers are entirely unreliable. Some of the abrupt shifts are evident in real time, when viewing the charts at the Worldometer above, and the graphs at <https://www.statista.com/statistics/1108670/coronavirus-cumulative-cases-in-south-africa/>.

<sup>322</sup> S Payne ‘Western Cape Premier Alan Winde Calls for Caution as Covid-19 Cases Spike in Garden Route Area’ *Daily Maverick* (5 November 2020), accessed at <https://www.dailymaverick.co.za/article/2020-11-05-western-cape-premier-alan-winde-calls-for-caution-as-covid-19-cases-spike-in-garden-route-area>. The Scientists Collective ‘Anticipating a ‘Second Wave’ – and When and How South Africa Should Try to Prevent or Mitigate’ *Daily Maverick* (22 October 2020), accessed at <https://www.dailymaverick.co.za/article/2020-10-22-anticipating-a-second-wave-and-when-and-how-south-africa-should-try-to-prevent-or-mitigate-it/>.

that you could easily be infected with some variant of SARS-CoV-2. (And yet, many of you will still go to malls to go shopping – and you should know better.) The only open question is, when you do get infected, whether you will be asymptomatic, mildly ill, severely ill with permanent damage or dead.

Funny thing – this wicked problem is rather mild in comparison to others. Wealthy nations may return to normal(ish) by 2022 – though, as I’ve noted earlier – with respect to many questions surrounding SARS-CoV-2, the correct answer is ‘I don’t know’ (especially as we learn more about the virus and thus more about the efficacy of possible interventions). Thus, my final entreaty is that this account of wicked problems will not just be grim, but compelling, individually and cumulatively, and that the subsequent analysis of permanent technological unemployment will enable you to see an established and predictable pattern.<sup>323</sup>

### *How COVID-19 meets the defining features of a wicked problem*

It’s useful at this juncture to recall Rittel and Weber’s decalogue of defining features of a wicked problem – which does not, I might add, require that all 10 must be satisfied:

1. They lack a definitive formulation.
2. No metric exists to identify the point at which a solution has been discovered.
3. There may be better and worse outcomes as opposed to true or false results.
4. An absence of adequate tests makes it difficult to vindicate a final optimal outcome.
5. Some problems tend to require one-shot responses rather than allow for trial and error.
6. The complexity of a problem complicates our ability to assess whether all possible solutions have been identified.
7. The specific nature of wicked problems often limits the usefulness of a solution to one wicked problem to another wicked problem.
8. One wicked problem might actually be a function of another wicked problem; or worse still, wicked problems of different kinds might actually reinforce and accelerate one another.
9. Significant discrepancies may obtain between explanations for and the extent of a wicked problem.
10. Policymakers often have no margin for error given the gravity of the wicked problem as well as the possibility of severe unintended negative consequences that might flow from their proposed solutions.<sup>324</sup>

First, while now a couple of safe and efficacious vaccines have created a sense that the pandemic may come to a halt, the appearance of new variants have created cause for

<sup>323</sup> See I Somini *Democracy and Political Ignorance: Why Smaller Government is Better* (2016); J Brennan *Against Democracy* (2016). On the general rollback of the democratic nation-state, see L Diamond & M Plattner (eds) *Democracy in Decline?* (2015); R Cohen ‘How Democracy Became the Enemy’ *The New York Times* (6 August 2018), accessed at <https://www.nytimes.com/2018/04/06/opinion/sunday/orban-hungary-kaczynski-poland.html>; ‘After Decades of Triumph, Democracy is Losing Ground: What’s Behind the Reversal’ *The Economist* (14 June 2018), accessed at <https://www.economist.com/international/2018/06/14/after-decades-of-triumph-democracy-is-losing-ground>; Pew Research Centre *By the People* (2018): 24% of global participants favoured rule by the military; 26% favoured a strong leader unconstrained by a legislature or a judiciary.

<sup>324</sup> H Rittel & M Webber ‘Dilemmas in a General Theory of Planning’ (1973) 4 *Policy Sciences* 155, 161–167. (Rewritten for clarity by this author.)

concern about the length of the pandemic and how many people will fall seriously ill and die across the world. Of greater concern is the lack of global cooperation with respect to the speedy and equitable production and distribution of successful vaccines. Without a global governing body, most of the vaccine manufacturers have entered into agreements with the wealthiest nations. Thus, while some nations will see roll-outs to their entire population by the end of 2021, other nations will have to wait their turn at the back of the queue. The South African government's inaction and lassitude have left us with little access to vaccines. After creating a R800 billion stimulus and relief package in which a lot of money did not move, the government could have easily committed a couple of billion to one of the more promising candidates – when whispers of 'cautious optimism' started to circulate. Not only did they miss two COVAX deadlines, but they didn't even explore partnering with Aspen Pharmacare after it had secured an end of production agreement with Johnson & Johnson. Now, [a]ccording to leaked internal documents, funding and supply concerns have placed COVAX, the global initiative to share coronavirus vaccines, at "very high" risk of failure.<sup>325</sup> Thus, even a belated payment to COVAX does not leave South Africa with a reliable source of a vaccine for even 10% of the population (what participation in COVAX promised). And here we have another good example of a critical feature of wicked problems: the absence of inclusive global political and economic institutions that exercise any capacity to solve wicked problems.

Second, successful distribution is not simply a matter of access. First, we now know that one of the leading vaccines must be kept at  $-70^{\circ}\text{C}$ . (Others – such as Moderna's vaccine – can survive at warmer sub-zero temperatures.<sup>326</sup>) The second stumbling block is the creation of enough large cargo planes retrofitted to fly the vaccines at those temperatures around the world. However, that's not the end of the line for the cold supply chain. Once the vaccine arrives, the cold chain must be maintained. South Africa, despite its sophistication, currently lacks the capacity to maintain the cold chain for its entire population. As matters stand, only a few small laboratories can sustain extremely low temperatures. As of December 2020, the South African government has remained silent about the purchase of large numbers of freezers for vaccines, or how it would roll out the vaccine to communities outside the major metropolises, even if it found itself able to procure the necessary equipment. Of course, such quiescence could change now that the government knows that its lassitude with respect to access to a vaccine or to the creation of plans for a roll-out could cost us dearly. However, the government's ongoing silence – or responses ranging from vaccine denialism to blatant lies about contractual talks with pharmaceutical manufacturers to, at least, a public apology by a medical expert about the failure to move on the 'cautious optimism' in June 2020, to efforts to secure vaccines by the end of December 2020 – provides little cause for hope. But even now, such a change in course could still mean years of living with COVID-19 infections and deaths. Meanwhile, the race to Level 1 and the lifting of international air travel restrictions invited new strains of the virus – already in wide circulation – into the country. In the absence of

<sup>325</sup> T Bollyky & C Bown 'Vaccine Nationalism Will Prolong the Pandemic' *Foreign Affairs* (29 December 2020), accessed at <https://www.foreignaffairs.com/articles/world/2020-12-29/vaccine-nationalism-will-prolong-pandemic>.

<sup>326</sup> C Dall 'Early Data Show Moderna's COVID Vaccine 94.5% Effective' Center for Infectious Disease Research and Policy (16 November 2020), accessed at <https://www.cidrap.umn.edu/news-perspective/2020/11/early-data-show-modernas-covid-vaccine-945-effective>.

global coordination with respect to containing the pandemic, we find ourselves in a cycle of: ‘Rinse. Repeat.’

Third, we already know there can and will be better and worse outcomes. Some nations moved with alacrity to head off transmission of COVID-19, while other nations dawdled and left every segment of the population at risk of infection and death. Despite the incredibly high score the United States received on the Global Health Security Index – few nations scored higher, political mismanagement and outright duplicity and dissembling has turned that split and deeply flawed democracy into the world’s leader in infections and deaths. Moreover, as we saw throughout 2020, most nations relaxed their lockdowns and severe limits on movement before the virus was truly under control. Second and third waves of the pandemic have occurred as a result. Thus, while other countries have suffered from ‘pandemic fatigue’ and experienced spikes in infections because both the state and the broader society have proven incapable of staying in place, South Africa has suffered from the illusion – promoted by the government – that everything is just fine. Indeed, the stubborn opacity of state health officials extends to an ongoing denial that official fatality numbers are at least three-and-a-half times the reported 23 000.<sup>327</sup>

Fourth, in September 2020, as South African testing reached the vanishing point, antibody assays in some urban communities revealed up to 40% seropositivity/seroprevalence in already compromised communities – persons living with HIV and pregnant women. In addition, we have no idea whether the virus can remain dormant in the body and reappear at some later date. HIV remains within the system even when the viral load is diminished. At this juncture, we have no intermediate or final tests to vindicate a truly optimal outcome. We have, as of December 2020, slightly better treatment for severe cases, a few viable vaccines ... and a new highly transmissible variant currently able to evade control.

Fifth, without truly global cooperation, we have no idea when the pandemic will actually come to an end. In addition, our limited capacity to test for the virus – due to a lack of political will as well as a shortage of reagents – points to future difficulties in controlling the virus.

Sixth, although a vaccine may be the gold standard of solutions, it may not provide a fully adequate resolution to the pandemic. While a 95% efficacy rate for the first line of vaccines may prove sufficient to blunt some degree of global transmission, we will also have to contend with widespread reluctance to take vaccines – either because of lack of faith in science or other other cultural impediments. In addition, mutations on variants already in circulation have made initial vaccines less effective, and public health officials are already concerned about the next pandemic.

Seventh, the steps taken to mitigate the harm of the virus – from lockdowns to testing to social distancing (none of which have been employed with genuine commitment in South Africa) – will prove of limited use when it comes solving other wicked problems. Indeed, until such a time as most people receive a safe and efficacious vaccine, enough people may

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<sup>327</sup> K Cowan ‘Evidence Mounts that SA’s Covid-19 Death Toll is not Accurate, Could Be Double Reported 20 000’ *News24* (14 November 2020), accessed at <https://www.news24.com/news24/southafrica/investigations/evidence-mounts-that-sas-covid-19-death-toll-is-not-accurate-could-be-double-reported-20-000-20201114>. Of course, the inaccurate death count is not news. As Discovery Health and the South African Research Council revealed in September 2020, the actual fatality count could be over three times the official number.

continue to engage in risk-averse behaviour that further damages the economy. (South Africans seem to be like the Swedes, Belarusians and many Americans when it comes to ignoring the risks associated with the virus.<sup>328</sup>) However, since broken or impoverished systems are not the only drivers of pandemics, *we should be more concerned about the interaction of SARS-CoV-2 with other wicked problems*. As it turns out, climate change and severe drought have played a significant role in the decimation of other large populations. In 16th-century Mexico, virtually 90% of the population died off. It had previously been thought that foreign diseases – from smallpox to measles to typhus – had been the primary cause. However,

[r]ecent epidemiologic research suggests that the events in 1545 and 1576, associated with a high death rate and referred to as Cocoliztli (Nahuatl for ‘pest’), may have been due to indigenous haemorrhagic fevers. Tree-ring evidence, allowing reconstructions of the levels precipitation, indicate that the worst drought to afflict North America in the past 500 years also occurred in the mid-16th century, when severe drought extended at times from Mexico to the boreal forest and from the Pacific to Atlantic coasts. These droughts appear to have interacted with ecologic and sociologic conditions, magnifying the human impact of infectious disease in 16th-century Mexico. The epidemic of Cocoliztli from 1545 to 1548 killed an estimated 5 million to 15 million people, or up to 80% of the native population of Mexico. In absolute and relative terms the 1545 epidemic was one of the worst demographic catastrophes in human history ... The Cocoliztli epidemic from 1576 to 1578 Cocoliztli epidemic killed an additional 2 to 2.5 million people, or about 50% of the remaining native population.<sup>329</sup>

Both broken or underfunded healthcare systems *and* climate change induced severe drought have become entrenched phenomena throughout South Africa.<sup>330</sup> The concatenation of the two could precipitate an even more deadly pandemic or make the country more vulnerable to pest-borne illnesses capable of crossing borders and oceans.<sup>331</sup> How both drought and a broken healthcare system might interact with HIV and TB – for which South Africa has a co-infection rate of a mind-numbing 60% – is anybody’s guess.<sup>332</sup> Finally, South Africa, already in a terribly beleaguered economic state before the pandemic, has been consigned to

<sup>328</sup> W Munchau ‘Sweden’s Covid-19 Experiment Holds A Worldwide Warning’ *Financial Times* (13 September 2020), accessed at <https://www.ft.com/content/9a1e118f-a4ef-43ab-a981-58b8bd35c0e1>.

<sup>329</sup> R Accuna-Sotto, D Stahle, M Cleaveland & M Therrel ‘Megadrought and Megadeath in 16th Century Mexico’ (2002) 8 *Emerging Infectious Disease Journal* 360.

<sup>330</sup> Mass movements of people into and around South Africa are already part of the landscape. Climate change induced drought is certainly a primary driver. South Africa – with the continent’s second largest economy – also attracts refugees from across the sub-Saharan region. Although Cape Town has narrowly averted the ignominious distinction of becoming the world’s first major city to run out of water, smaller communities throughout the Eastern Cape already have. M Isa ‘Water Scarcity is Here to Stay’ *Finance24* (18 January 2018), accessed at <https://www.news24.com/fin24/finweek/featured/water-scarcity-is-here-to-stay-20180130>. The effects of water scarcity can already be felt throughout the country as denizens move from drought afflicted provinces (eight of nine have experience severe drought over the past several years) to the one province which has plenty of water – Gauteng. It’s easy to imagine that water shortages will ignite the same kind of vicious infighting, ethnic and racial tensions, and vast corruption that Sao Paulo (Brazil) and Mexico City (Mexico) regularly experience.

<sup>331</sup> *ibid.*

<sup>332</sup> H Mabuza ‘Global Health – South Africa: CDC’s HIV/AIDS Care and Treatment Programs in South Africa – TB and HIV’ *Centers for Disease Control and Prevention* (2014) accessed at [https://www.cdc.gov/globalhealth/countries/southafrica/what/tb\\_hiv.htm](https://www.cdc.gov/globalhealth/countries/southafrica/what/tb_hiv.htm).

a free fall from which it will be extremely difficult to recover – even as it rushed to resume ‘economic normalcy’ and Level 1 during September 2020.

Eighth, at the very beginning of the pandemic, SARS-CoV-2 had been thought to be primarily a pulmonary disease – that may or may not be harmful or fatal. Within months, SARS-CoV-2 was found to cause any number of lethal and non-lethal ailments throughout the body. We will surely discover far more over time. It’s only the beginning.

Of course, this neat matrix comes with a caveat. As I noted in the Prologue: the scientists working on a variety of solutions to COVID-19 tend to be cooperating – sharing information – at the same time as they continue to compete, as academics invariably do. Still, it didn’t take long for the pandemic to become politically weaponised under Donald Trump’s febrile leadership, while China has used the pandemic as opportunity to end democratic protests in and the independence of Hong Kong, attack India, and strengthen its grip over the Uighur Province.<sup>333</sup>

### *South Africa fails to pass the marshmallow test*<sup>334</sup>

Somehow, but not surprisingly, South Africa managed to outstrip my predictions from November of 2019. We have failed what psychologists have commonly called the marshmallow test. The test works as follows. First, kids are given a marshmallow. Second, they are then informed that if they hold off eating the first marshmallow for 15 minutes then they will receive a second marshmallow. If they do so, we should, as the theory goes, have a decent sense of their capacity for delayed gratification.

By the end of July 2020, we had a good idea of what works and what doesn’t work with respect to the suppression of the transmission of SARS-CoV-2. Once contained, we know what steps we need to take – while ensuring that the transmission rate stays at  $R < 1$  – to restart a nation’s economy in a reasonably safe fashion – though nothing with this virus and its manifestation as COVID-19 is guaranteed. (We are still learning about its incubation period, as well as the period in which it can produce false positive tests.<sup>335</sup>)

First, extreme strict social distancing. The virus can travel airborne for up to six metres – and tiny droplets can remain in the air for hours at a time. That’s an excellent reason to wear a mask: though only some masks work and even medical masks have a short shelf life. Second, a state must test large portions of the population. As testing occurs, the state must trace and isolate infected persons, and then track down those persons who came in contact with them and who therefore may have been infected. This strategy has proven successful.

<sup>333</sup> J Areddy ‘Representatives of China’s Uighurs File Evidence to International Criminal Court’ *The Wall Street Journal* (6 June 2020), accessed at <https://www.wsj.com/articles/representatives-of-chinas-uighurs-file-evidence-to-international-criminal-court-11594078290>.

<sup>334</sup> P Krugman ‘America Fails the Marshmallow Test’ *The New York Times* (9 July 2020), accessed at <https://www.nytimes.com/2020/06/09/opinion/coronavirus-reopening-marshmallow-test.html>. As Krugman notes, the test isn’t great science, but it does make for a lovely metaphor.

<sup>335</sup> While the coronavirus’ incubation period normally lasts from 3 to 5 days, it can last up to 14 days. The latter duration makes it difficult to identify a small cohort of live cases over brief durations of time. One would have to test repeatedly before one could be sure that a person was SARS-CoV-2 free and incapable of infecting others. Such intense testing is beyond the current scope of most countries. In countries or jurisdictions that have employed strict lockdown, stay-in-place and social distancing orders, such intense testing has proven unnecessary. That level of testing may be important in ensuring that work environments which require close contact remain COVID-19 free.

Finally, once this regime is in place, and the infection rates are low, people can return to work and the economy can get up and running under a reflexive system of surveillance and record-keeping designed to prevent new surges of cases.

South Africa has failed the marshmallow test at every turn. Masks are essential. But government officials – on the Department of Health website – fail to mention them. As matters stood in late July 2020, the government posted signs regarding the importance of handwashing and sanitising despite the overwhelming evidence that transmission and infection occur predominantly through the inhalation of large and tiny droplets carrying SARS-CoV-2. Our dense, congested townships made strict social distancing impossible and crowded taxis carry the virus from one stop to the next.<sup>336</sup> One only needed to track the taxi routes in Johannesburg in the early days of the pandemic to see how it would spread throughout the poorest communities.

As part of its ‘theatre’ of pandemic control during early August 2020,<sup>337</sup> while South Africa raced toward the ignominious distinction of having the fifth-highest number of infections in the world, the state begged individual citizens for low-dose oxygen concentrators. It ostensibly had insufficient hospital beds with access to high-dose oxygen concentrators. (South Africa never actually ran out of hospital beds. The reasons for the stayaway defy easy explanation. But many people simply stopped seeking treatment: some out of fear; some because treatment costs money; some because the state’s move to Level 2 conveyed the message that people need not be concerned; some – say dead, foreign-born, undocumented mineworkers – because they lacked access to hospitals.) Finally, as a second wave began in late October and early November 2020, the President treated the nation to one of his finest acts of prestidigitation. In a televised address, he managed to conflate the infections and fatalities due to COVID-19 with one of South Africa’s greatest scourges – gender-based violence – and announced that we are broke and cannot replicate the same relief and stimulus package. Those who had died from COVID-19 would have their memories honoured by lowering the flag to half-mast for five days.

### *The peripheral: The COVID-19 South Africa and world – now and future*

As of December 2020, South Africa is operating week to week, with a fiscal and relief plan that has largely failed both the public’s health and our economic wellbeing. Having moved pieces of the budget around to provide immediate relief, and slashed government expenditures in numerous sectors, the question of what happens in 2021 is particularly poignant: According to a United Nations report on South Africa, if we had seriously undertaken the hammer and the dance of mitigation – and reduced ‘social contact by 45 per cent – [then] the total number of deaths and ... [people requiring] hospitalization,

<sup>336</sup> Train transportation has been largely eliminated as an inexpensive mode of mass transportation, as the profitable wire that enables them to run has been ripped up from the ground. B Simelane ‘Stripped Bare: Looting Till There Is Nothing Left of Gauteng’s Rail Network’ *Business Maverick* (29 September 2020), accessed at <https://www.dailymaverick.co.za/article/2020-09-29-stripped-bare-looting-till-there-is-nothing-left-of-gautengs-rail-network/>.

<sup>337</sup> Again, only after public embarrassment did the Minister of Health, Dr Mkhize, admit that South Africa had most likely already reached 12 million infections – as opposed to the official count of 650 000. G Imray ‘South Africa Says 12 Million “Probably” Had Coronavirus’ *Medical Xpress* (16 September 2020), accessed at <https://medicalxpress.com/news/2020-09-south-africa-million-coronavirus.htm>.

could have been significantly reduced.<sup>338</sup> If we had relied largely on the hammer, and remained in a lockdown that also successfully rolled out ‘wide-scale testing and tracing, with quarantine of confirmed cases on top of the social distancing measures in place,’ then we *might* have ‘limit[ed] the number of deaths to 15 438.’<sup>339</sup>

On the peripheral, immense pressure exists to return to ‘normal life’ – a world without the illness and death wrought by the pandemic. Why? As a rule, and as noted in the Prologue, people tend to discount the possibility of future risks and harm. ‘It’ will happen to someone else – not me. Tomorrow will be the same as today or yesterday – and today I’m fine, even if dark clouds can be seen gathering on the horizon. We become inured to the numbers, unless we come to experience the pain of loss more immediately – through the death of family or friends, or our own flirtation with serious morbidity and mortality.

This author tends to be hyper-alert to possible future risk and harm. I have lost too much time due to a long-standing chronic illness and disability to risk loss of life, permanent damage or a reversal of recent good fortune. That’s especially true when the harm in question is a ‘disease’ for which I have been identified as highly susceptible. I happen to have three comorbidities with respect to COVID-19: severe asthma (as well as a sensitivity to Johannesburg’s polluted air),<sup>340</sup> an autoimmune disorder, far too high a body mass index and blood type A. (Blood types also appear to be a significant differentiator when it comes to COVID-19 outcomes: RH beats OBA and O beats A.)<sup>341</sup> Of course, as I noted at the outset, one doesn’t have to be particularly risk averse to recognise potential sources of danger.<sup>342</sup>

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<sup>338</sup> A Ebrahim ‘COVID-19 and Socio-Economic Impact in Africa: The Case of South Africa’ *United Nations University World Institute for Development Economics Research* (April 2020), accessed at <https://doi.org/10.35188/UNU-WIDER/WBN/2020-2>.

<sup>339</sup> *ibid.*

<sup>340</sup> Studies conducted in China have shown that a high percentage of fatal COVID-19 cases reflected Chronic Obstructive Pulmonary Disease (COPD). China and India have a roughly equal share of the 30 most-polluted cities in the world. On occasion, as in December 2019, Johannesburg took the top spot thanks to particulates blown west from the coal-fired power plants in Mpumalanga (one of the world’s leading CO<sub>2</sub> hot spots). COPD is certainly a comorbid factor in respect of which public health officials in South Africa should demonstrate greater awareness.

<sup>341</sup> D Ellinghaus, F Degenhardt et al. ‘Genomewide Association Study of Severe Covid-19 with Respiratory Failure’ *New England Journal of Medicine* (17 June 2020), accessed at <https://doi.org/10.1056/NEJMoa2020283>:

We detected ... [an] association signal at locus 9q34.2 coincided with the *ABO* blood group locus; in this cohort, a blood-group-specific analysis *showed a higher risk in blood group A than in other blood groups* (odds ratio, 1.45; 95% CI, 1.20 to 1.75;  $P=1.48 \times 10^{-4}$ ) and *a protective effect in blood group O* as compared with other blood groups (odds ratio, 0.65; 95% CI, 0.53 to 0.79;  $P=1.06 \times 10^{-5}$ ). (Emphasis added)

<sup>342</sup> M Zetz, J Zucker & N Tatonetti ‘Testing the Association between Blood Type and COVID-19 Infection, Intubation and Death’ *MedRxiv* (August 2020), accessed at <https://doi.org/10.1101/2020.04.08.20058073>:

Recent evidence suggests blood type may affect risk of severe COVID-19. We used observational healthcare data on 14,112 individuals tested for SARS-CoV-2 with known blood type in the New York Presbyterian (NYP) hospital system to assess the association between ABO and Rh blood types and infection, intubation, and death. We found slightly increased infection prevalence among non-O types. Risk of intubation was decreased among A and increased among AB and B types, compared with type O, while risk of death was increased for type AB and decreased for types A and B. We estimated Rh-negative blood type to have a protective effect for all three outcomes.

Intelligence agencies and public health institutes are, by design, created to assess such threats well in advance of their occurrence. They did so with respect to a potentially horrifying and deadly pandemic and beat the drum for years. That no one really listened – or that US leaders eviscerated state organs designed to sound the alarm – again speaks to both the craven nature of many politicians and the general inclination of human beings to discount potential future risks and to express scepticism with respect to basic and accepted science.<sup>343</sup>

The primary causes for South Africa's early low levels of transmission of the contagion are its lack of connectedness to global travel. Its outsized bourse doesn't require people to be present to engage in the trading of equities, currency or bonds. The not so ironic consequence of long-term kleptocratic rule is that there's been no real sense of doing business *in* South Africa. As I note in Chapter IV, South Africa was – until quite recently – the ninth-highest exporter of investment capital (foreign investment by South African companies and individuals) and the third-highest in gross terms of GDP at 34%.

What do we make of South Africa's post-apartheid/junk status/depression-level economy on the peripheral? Both SARS and the Minister of Finance have noted that we could have a revenue shortfall in 2021 over R300 million. The StatsSA report of a 52% jump in unemployment in the third quarter of 2020 augurs ill – but then, again, it didn't quite capture all the job loses in the second quarter.<sup>344</sup>

On the peripheral, Minister Mkhize's rather cavalier response to the concerns of teachers – 'We need to open up the schools because we need to understand [how] to coexist with the virus and know how to behave where there is a viral infection' – seemed inconsistent (at best) with his oath 'to do no harm'.<sup>345</sup> Given the Hobson's choice between starvation and work, the South African government, as of late May 2020, began choosing largely voluntary mitigation strategies over mandatory suppression measures. On the peripheral, that is what the Hippocratic Oath – 'first do no harm' – becomes. By July–August 2020, at the height of the first wave, virtually the entire economy was open for business. Having failed every aspect of the marshmallow test, it's hard to credit the state's decision to open up the economy when it did not undertake a concerted effort to take the health of all South Africans seriously.

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<sup>343</sup> Some people see the writing on the wall. My best friend, George Abraham, with whom I share so many of the ideas and beliefs found in this work, sold off all his stocks and bonds before COVID-19 breached US soil. My grandmother, Bertha, born in Beronovicz (in what is now Belarus) made her way to the United States before it closed its doors in 1925 to people from Eastern and Southern Europe, Africa, Asia and South America – and before Nazi Germany's SS, with the assistance of Belarusians, annihilated everyone in her family.

<sup>344</sup> 'South Africa Unemployment Jumps 52% in the Third Quarter' *BusinessTech* (12 November 2020), accessed at <https://businesstech.co.za/news/business/448076/south-africa-unemployment-jumps-52-in-the-third-quarter/>: Employment remains nearly 1.7 million below the level in Q3 2019. Unemployment increased substantially by 2.2 million (52.1%) to 6.5 million, compared to the second quarter of 2020.

<sup>345</sup> H Isilow 'COVID-19: South African Teachers Call for School Closures' *Anadolu Agency* (14 July 2020), accessed at <https://www.aa.com.tr/en/africa/covid-19-safrican-teachers-call-for-school-closures/1910649>. By contrast, the University of the Witwatersrand has taken a far more enlightened approach to contact teaching. Save for a small number of students who need to be on campus to access online learning and a small number of staff and faculty required to accommodate those students, the university has largely adopted the best practice suggested by experts.

*What is to be done? On the limits of inward industrialisation or autarky*

One suggestion that has been floated is ‘inward industrialisation’ – simply another word for *autarky*. South Africa, following in the august footsteps of Nazi Germany, already has a long history of ‘inward industrialisation’ designed to insulate the country from the economic sanctions associated with apartheid. SASOL – one of South Africa’s autarkic success stories – borrowed the early German inventions of the Fischer-Tropsch process (1913) of indirect coal liquefaction (ICL) and Bergius’ process of direct coal liquefaction (DCL).<sup>346</sup> They extended their insights into the creation of a novel cutting edge ‘coal to liquid’ (CTL) gas technology. They’ve had an extremely good run. But COVID-19 has brought that run to at least a temporary end. With oil selling at extremely low prices due to dramatically diminished demand, SASOL’s more expensive product is hardly worth purchasing. That example alone should chasten those persons who think that ‘inward industrialisation’ and autarky will enable ‘excess capital’ – from insurance companies or

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<sup>346</sup> ‘Coal Liquefaction’ *Wikipedia* (5 May 2020), accessed at [https://en.wikipedia.org/wiki/Coal\\_liquefaction](https://en.wikipedia.org/wiki/Coal_liquefaction): Coal liquefaction originally was developed at the beginning of the 20th century. The best-known CTL process is Fischer–Tropsch synthesis (FT), named after the inventors Franz Fischer and Hans Tropsch from the Kaiser Wilhelm Institute in the 1920s. The FT synthesis is the basis for indirect coal liquefaction (ICL) technology. Friedrich Bergius, also a German chemist, invented direct coal liquefaction (DCL) as a way to convert lignite into synthetic oil in 1913. Coal liquefaction was an important part of Adolf Hitler’s four-year plan of 1936, and became an integral part of German industry during . During the mid-1930s, companies like IG Farben and Ruhrchemie initiated industrial production of synthetic fuels derived from coal. This led to the construction of twelve DCL plants using hydrogenation and nine ICL plants using Fischer–Tropsch synthesis by the end of World War II. In total, CTL provided 92% of Germany’s air fuel and over 50% of its petroleum supply in the 1940s. The DCL and ICL plants effectively complemented each other rather than competed. The reason for this is that coal hydrogenation yields high quality gasoline for aviation and motors, while FT synthesis chiefly produced high quality diesel, lubrication oil, and waxes together with some smaller amounts of lower quality motor gasoline. The DCL plants were also more developed as lignite – the only coal available in many parts of Germany – worked better with hydrogenation than with FT synthesis. After the war, Germany had to abandon its synthetic fuel production as it was prohibited by the Potsdam conference in 1945. South Africa developed its own CTL technology in the 1950s. The South African Coal, Oil and Gas Corporation (Sasol) was founded in 1950 as part of industrialization process that the South African government considered essential for continued economic development and autonomy. However, South Africa had no domestic oil reserves, and this made the country very vulnerable to disruption of supplies coming from outside, albeit for different reasons at different times. Sasol was a successful way to protect the country’s balance of payment against the increasing dependence on foreign oil. For years its principal product was synthetic fuel, and this business enjoyed significant government protection in South Africa during the apartheid years for its contribution to domestic energy security. Although it was generally much more expensive to produce oil from coal than from natural petroleum, the political as well as economic importance of achieving as much independence as possible in this sphere was sufficient to overcome any objections. Early attempts to attract private capital, foreign or domestic, were unsuccessful, and it was only with state support that the coal liquefaction could start. CTL continued to play a vital part in South Africa’s national economy, providing around 30% of its domestic fuel demand. The democratisation of South Africa in the 1990s made Sasol search for products that could prove more competitive in the global marketplace; as of the new millennium the company was focusing primarily on its petrochemical business, as well as on efforts to convert natural gas into crude oil (GTL) using its expertise in Fischer–Tropsch synthesis.

investment funds or well-endowed entrepreneurs – to spur local industry.<sup>347</sup> Descriptively: It's not going to happen. Prescriptively: It ought not to happen.

Let's think through this autarky/inward industrialisation argument. The global food supply chain has not broken down. Its humming along just fine – if you can afford food. The real issue with respect to food security is unemployment and extreme poverty. That the apartheid state fostered these conditions and an autocratic, democratically elected government has failed to adequately address absurdly high structural unemployment qualifies as a crisis of epic proportions. Recall South Africa's abysmal rating of 47th of 66 emerging economies, calculated in terms of four basic criteria said to reflect fiscal stability. *The Economist's* analysis depicts real distress.

A subsequent work in *The Economist* concludes that 'food autarky is a delusion. Interdependence and diversity make you more secure.'<sup>348</sup> That broad statement on interdependence coheres with the rest of the thesis propounded in this book. *The Economist* argues, in part, as follows:

If you ... want an example of trade and global co-operation, look no further than your dinner plate. As the lockdowns began in the ... two months ago, many feared that bread, butter and beans would run short, causing a wave of stocking-up. Today, thanks to fleets of delivery lorries filling supermarket shelves, you can binge-eat as you binge-watch. This capitalist miracle reflects not a monolithic plan, but an \$8trn global supply chain adapting to a new reality, with millions of firms making spontaneous decisions, from switching rice suppliers in Asia to refitting freezers. The system is far from perfect: as incomes collapse, more people are going hungry. There are risks, from labour shortages to bad harvests. And there is an irony in seeing the industry grapple with a crisis that probably began with the sale of pangolin meat in a market in Wuhan. But the food network is so far passing a severe test. It is crucial that, during and after the pandemic, governments do not lurch into a misguided campaign for self-reliance. The supply chains behind an iPhone, or a car component that criss-crosses the Rio Grande, are wonders of co-ordination. But the unsung star of 21st-century logistics is the global food system. From field to fork, it accounts for 10% of world GDP and employs perhaps 1.5bn people. The global supply of food has nearly tripled since 1970, as the population has doubled to 7.7bn. At the same time, the number of people who have too little to eat has fallen from 36% of the population to 11%, and a bushel of maize or cut of beef costs less today than 50 years ago in real terms. Food exports have grown sixfold over the past 30 years; four-fifths of people live in part on calories produced in another country. This happens in spite of governments, not because of them. Although their role has declined, they still sometimes fix prices and control distribution ... Concentration and government intervention, along with the vagaries of the climate and commodity markets, mean that the system is finely tuned and can misfire, with devastating consequences. In 2007–08 bad harvests and higher energy costs pushed up food prices. This led governments to panic about shortages and ban exports, causing more anxiety and even loftier prices. The result was a wave of riots and distress in the emerging world ... Despite the severity of today's shock, each layer of the system has

<sup>347</sup> Supply requires demand. L Omarjee 'New Vehicles Sales Plummet 98.4%' *Fin24* (4 May 2020), accessed at <https://www.news24.com/fin24/companies/industrial/lockdown-new-vehicle-sales-plummet-984-in-april-20200504>. During the fiscal crisis and recession of 2008, excess capital in South Africa quite often sought commercial real estate, on the expectation that businesses and new malls would fill them over time. That hasn't happened. Property remains empty. People remain homeless.

<sup>348</sup> 'The Global Food Supply Chain is Passing a Severe Test: Keeping the World Fed' *The Economist* (9 May 2020), accessed at <https://www.economist.com/leaders/2020/05/09/the-global-food-supply-chain-is-passing-a-severe-test>.

adapted. The supply of cereals has been maintained, helped by recent harvests and very high stocks. Shipping firms and ports continue to move around food in bulk ... Crucially, most governments have learned the lesson of 2007–08 and avoided protectionism ... So far this year prices have dropped. But the test is not over yet. As the industry has globalised, it has grown more concentrated, creating bottlenecks ... And as the economy shrinks and incomes collapse, the number of people facing acute food shortages could rise – from 1.7% of the world’s population to 3.4%, the UN reckons, including in some rich countries. This [increase] reflects a shortage of money [and institutional failures], not food, but if people go hungry governments will, understandably, take extraordinary measures ... Governments need to hold their nerve and keep the world’s food system open for business. That means letting produce cross borders, offering visas and health checks to migrant workers, and helping the poor by giving them cash, not stockpiling. It also means guarding against further industry concentration which could grow, if weaker food firms go bust or are bought by bigger ones ... To understand food as a national-security issue is wise; to bend that understanding to self-sufficiency drives and blunt intervention is not. Already, before this year, food had become part of a trade war. America has sought to manage its soyabean exports and put tariffs on cheese. President Donald Trump has designated abattoirs part of America’s critical infrastructure. President Emmanuel Macron has called for Europe to build up its ‘strategic autonomy’ in agriculture. Yet food autarky is a delusion. Interdependence and diversity make you more secure.<sup>349</sup>

Say what you will – ‘but interdependence [does] ... make you more secure.’ To sum up, reshoring and autarky would actually become another wicked problem and make the world a far poorer and more dangerous place.<sup>350</sup> Proof, global food supply chains and global trade have not collapsed. That said, there’s something to be said for attempting to ensure that one not need rely upon other countries for some essential goods. The only question in South Africa is who, right now, would invest in the creation of firms designed to supply such goods. I’d like to see whether we can pass the marshmallow test first.

Of course, this line of analysis buttresses my general contentions about wicked problems. We continue to discount the future risk of nukes, climate change, resource scarcity, permanent technological unemployment, etc. As COVID-19 has just ruthlessly taught us, there’s simply no perfectly safe place to hide in our interconnected world.

### *What are we talking about when we talk about solidarity?*

What will South Africa do next year?<sup>351</sup> How should it respond to another ‘Great

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<sup>349</sup> *ibid.*

<sup>350</sup> E-Y Jeong & T Fairless ‘Global Trade Returns Faster Than Expected’ *The Wall Street Journal* (20 September 2020), accessed at <https://www.wsj.com/articles/globaltradereturns-faster-than-expected-11600594200>. Of course, while new waves of COVID-19 will test resiliency, so far trade has been robust – especially where fewer people are required to load on and off ships and aircraft.

<sup>351</sup> In downgrading South Africa yet another notch to BB–, with a negative outlook, Fitch wrote as follows: The pandemic shock has led to a sharp fall in government revenue and additional spending needs, worsening already weak public finances. While some of the additional expenditure was covered by reprioritisation, expenditure is still expected to be 0.8% of GDP higher than in the pre-pandemic February Budget. We expect the consolidated deficit to rise to 16.3% of GDP in the fiscal year ending March 2021 (FY20/21), up from 6.4% in FY19/20, overshooting the government’s latest projection of 15.7% ... We expect general government debt (including gross loan debt and around 2% of GDP local government debt) to rise to 94.8% of GDP in FY22/23 from 64.9% in FY19/20. Given its lower deficit forecasts, the government expects gross loan debt to rise to 90.1% of GDP in FY22/23 and to peak at 95.3% in FY25/26. The government’s projection is subject to considerable risks from

Levelling’?<sup>352</sup> Can it? What are we talking about when we talk about *solidarity*?<sup>353</sup> Shaun Chamberlin, co-leader of ‘Surviving the Future,’ and a consulting scholar at Sterling College, seems to think that solidarity means the following.

Large-scale problems do not require large-scale solutions, they require small-scale solutions within a large-scale framework. EcoGather is exactly that ... a global network in support of the great diversity of local conversations, solutions and indeed celebrations that will be necessary as we come to terms with the unravelling of the global market economy, and rediscover our dependence on nature, community, place and play.

It may be true that experimentalism, as described earlier, relies on local solutions to local problems that may provide more general lessons for others who are willing to share their own experiences. In April 2020, lots of people thought that we would learn this lesson from COVID-19. But as of December 2020, only a few nations have passed the marshmallow test. Most have either not taken account of what works, or failed to engage in the kind of meaningful cooperation with one another that would stem transmission of the virus. Only a clutch of liberal democracies seem capable of succeeding to get their own (generally homogeneous and equal) citizens to see themselves in one another – and even in others across borders. Autocratic states need not bother.

If we see, in the post-2020 future, solidarity with respect to fighting COVID-19 as opposed to the hardening of hearts and borders toward others or the dismantling the institutions that create systemic bigotry, then the notion that this pandemic might be a ‘critical juncture’ – in Acemoglu and Robinson’s felicitous phrase – might come to pass. But let’s first see what most of the world’s post-COVID-19 states – the majority of which are currently not inclusive, politically or economically – look like when the pandemic runs its course.<sup>354</sup> Let’s talk about solidarity when this plague has burned itself out, been cabined by medical advances and an efficacious vaccination rate of 85% has created the necessary 85% immunity required for herd immunity to kick in.

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its reliance on wage bill savings, relatively optimistic revenue assumptions and contingent liabilities. Finding consolidation measures to compensate for these risks will be complicated, given in-fighting within the government, social pressures and the weak growth environment.

‘Fitch Downgrades South Africa to “BB–”; Outlook Negative’ *Fitch Ratings* (20 November 2020), accessed at <https://www.fitchratings.com/research/sovereigns/fitch-downgrades-south-africa-to-bb-outlook-negative-20-11-2020>.

<sup>352</sup> W Scheidel *The Great Leveler: Violence & the History of Inequality from the Stone Age to the Twenty-First Century* (2017).

<sup>353</sup> M Calta ‘Sterling College Receives \$1.5 Million Grant to Launch EcoGather’ *Sterling College Press Release* (28 April 2020), accessed at [https://vtdigger.org/press\\_release/sterling-college-receives-1-5-million-grant-to-launch-ecogather/](https://vtdigger.org/press_release/sterling-college-receives-1-5-million-grant-to-launch-ecogather/).

<sup>354</sup> The coronavirus will likely surge and spread for the next 18–24 months and infect up to 70% of the population. K Moore, M Lipsitch, J Barry & M Osterholm ‘The Future of the COVID-19 Pandemic: Lessons Learned from Pandemic Influenza’ in ‘COVID-19: The CIDRAP Viewpoint’ *Center for Infectious Disease Research and Policy* (2020), accessed at [https://www.cidrap.umn.edu/sites/default/files/public/downloads/cidrap-covid19-viewpoint-part1\\_0.pdf](https://www.cidrap.umn.edu/sites/default/files/public/downloads/cidrap-covid19-viewpoint-part1_0.pdf). Osterholm, speaking on behalf of this team of epidemiologists from the Harvard School of Public Health, believes that (a) ‘The idea that this is going to be done soon defies microbiology’; (b) ‘Based on that, ... government officials should prepare for a long-term pandemic.’ C Crist ‘Two More Years of COVID-19 Pandemic Likely’ *WebMD* (4 May 2020), accessed at <https://www.webmd.com/lung/news/20200504/two-more-years-of-covid-19-pandemic-likely>.

## CHAPTER III

# The Wicked Problem of Permanent Technological Unemployment<sup>1</sup>

### A. Defining Technological Unemployment

This chapter was initially entitled ‘technological disruption, automation and mass unemployment’. That description was used, in part, because this portion of the book explores:

- the consequences of novel technological advances that displace manual and non-manual forms of labour against the background of extant mass unemployment in South Africa;
- the upshot of extremely poor levels of basic education, mismatches between available tertiary tuition and actual new occupational demands in a 21st-century economy, and a well-deserved reputation for being a rather distant ‘follower’ with respect to technological development and innovation is that South Africa is poorly placed when it comes to taking advantage of new forms of employment created by technological advances; and
- the likelihood that South Africa’s experience of increased mass unemployment in the near term and future as a result of high levels of (post)apartheid structural unemployment, recent COVID-19 induced unemployment and automation will end its experiment in inclusive democracy.

That description is not only unwieldy. It also fails to take into account over two centuries of literature – in economics, economic history, political theory, sociology and political science – on the subject of ‘technological unemployment’.<sup>2</sup> At the same time, readers ought not to lose to sight of one distinct feature of this current period of technological unemployment. While prior epochs witnessed displacement and job loss, they also eventually featured novel, more remunerative forms of employment associated with innovation. But the current era of technological disruption and the replacement of human labour by automation and

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<sup>1</sup> C Frey & M Osborne ‘The Future of Employment: How Susceptible Are Jobs to Computerisation?’ (2017) 114 *Technological Forecasting and Social Change* 254. The impact of technological change on the economy is considered different this time for three reasons: (1) *the pace of change has accelerated*; (2) *the scope of technological change is increasing*; and (3) *unlike innovation in the past, the benefits of technological change are not being widely shared*: real median wages have fallen behind growth in productivity, and inequality has increased. See also M Allen ‘A Coming Disruption: Millennials’ Future Lives and Work – Who’s Making the Most?’ *Axios AM Deep Dive* (6 April 2015). Allen writes:

Millennials in the United States already face one of the toughest economic landscapes of any generation since World War II: They work for relatively low pay, and college graduates are saddled with an average of \$30,000 in student debt: (1) Millennials came of age during the Great Recession. Since then, three-quarters of all new U.S. jobs have paid less than a middle-class income, according to Labor Department data; (2) These minimum- or lower-wage jobs are the ones that millennials – ages 23-38, born between 1981 and 1996, and the largest generation in the country – are often taking; (3) Unlike prior generations, there may not be much of a ladder up from there. Part of that is economics – tech and globalization have hollowed out middle-skill, middle-wage jobs.

<sup>2</sup> J Hicks *A Theory of Economic History* (1969) 154–155.

more sophisticated (or *merely so-so*) forms of artificial intelligence has observed increased profits *without* those profits being ploughed into a significant number of new job-creating industries or higher remuneration for existing tasks. That's a disturbingly recent and sustained phenomenon. Put differently, even with truly sweeping policy interventions that reshape everything from the nature of education, to labour relations to the ownership of intellectual property, some forms of employment will vanish entirely while the labour component in other tasks will diminish.<sup>3</sup> The difficulty that China has experienced in finding jobs for the 9% left unemployed by the pandemic – despite retraining or reskilling – suggests just how quickly automation and business models can shift the employment landscape during such 'critical junctures' as a global pandemic and the deepest worldwide recession since the Great Depression.<sup>4</sup>

Over the course of the next section, I describe early theories of 'technological unemployment': as it was understood, by theorists of very different stripes, in the still vibrant discipline of political economy. The following section discusses more modern theories of technological unemployment. I subsequently set out a more powerful, contemporary theory of permanent technological unemployment – which describes a world of so-so productivity effects, significant displacement effects, and limited reinstatement effects. In other words, the section explains why – in the absence of truly radical collective action that changes everything from education to labour relations to intellectual property to inheritance taxes and more – we will see (in the few democratic orders capable of change) significant increases in AI and automation induced unemployment. History, and the history of technological unemployment, has a lot to teach us about the relationship between innovation, labour, capital and the state. Pace of economic development over the last two centuries, the modern state (arrived rather late to the party) of supporting increased innovation, enhanced productivity and the concomitant rise in increased wages. The past remained a safer bet, and less of a challenge. Most nations throughout the 19th century preferred the stability of extant labour relations – from entrenched guilds to serfs – to the disruptions associated with technological innovation and mechanisation. No spoiler alert here. I'd hate to ruin a perfectly good story. The last two sections return to the acceleration of automation over the last two decades and what it means for 'the future of work' – here in South Africa and around the world (caveats included.)

## B. Early Theories of Technological Unemployment

Recognition of the problem in the English-speaking world takes places as early as 1759. With his eye on the shifting landscape around him, Adam Smith wrote, in his *Theory of Moral Sentiments*, that every polity owes its citizens two primary obligations:

- the ability to appear in the public square without shame; and
- the provision of those necessities required to live a life worth valuing.<sup>5</sup>

<sup>3</sup> P Cohen 'Many Jobs May Vanish Forever as Layoffs Mount' *The New York Times* (21 May 2020), accessed at <https://www.nytimes.com/2020/05/21/business/economy/coronavirus-unemployment-claims.html>.

<sup>4</sup> S Yu 'China's Retraining Campaign Offers Scant Prospects for the Unemployed: Programme Was Meant to Upgrade Skills of Millions of Workers Who Lost Jobs During the Pandemic' *Financial Times* (15 September 2020), accessed at <https://www.ft.com/content/51caf358-1058-4ee7-834a-c5b5cb8bf205?>.

<sup>5</sup> A Smith *A Theory of Moral Sentiments* (1759); A Smith *The Wealth of Nations* (1776)(R Campbell and A Skinner)(eds) 469–471.

Thus, some 17 years prior to the publication of *The Wealth of Nations*, Smith demonstrated that he was alive to the dislocation caused by early capitalism, responsive to the needs of fellow members of society who had had their lives disrupted, and committed to the state's provision of both the material and the immaterial goods necessary to pursue various comprehensive visions of the good.<sup>6</sup>

Smith also provides some of the first evidence of a causal connection between taxation and unemployment on the one hand, and the indulgent, conspicuous consumption of capitalists, landowners, an emergent petit bourgeoisie and unemployment on the other. However, he had, understandably, something of a blind spot with respect to the creation of automated machines and subsequent unemployment. Circa 1700, the world was rather flat. Most societies were agrarian and the average lifespan was 40.<sup>7</sup> It took another 70 years for the combination of the scientific revolution, the industrial revolution and the rise of the British Empire for a wealth gap to appear.<sup>8</sup> However, as late as 1800, the wealth gap between England and much of the rest of the world was only 4:1; and even that disparity in wealth was thinly spread within England itself.<sup>9</sup> According to Smith, writing in 1776, new technologies primarily increased the productivity of labourers:

The annual produce of the land and labour of any nation can be increased in its value by no other means but by increasing either the number of its productive labourers, or the productive powers of those labourers who had before been employed. [...] The productive powers of the same number of labourers cannot be increased, but in consequence either of some addition

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<sup>6</sup> In the second-most important book of political philosophy in the English-speaking world in the late-20th century (after Rawls' *A Theory of Justice*) – *Development as Freedom* – Amartya Sen credits Adam Smith for his awareness of growing, widespread inequality caused by early industrialisation, and his belief that the state has a duty to provide individuals with those necessities of life that would give them 'the ability to appear in public without shame'. A Sen *Development as Freedom* (1999) 73, quoting A Smith *The Wealth of Nations* (1776)(R Campbell and A Skinner)(eds)(1976) 469–471. By 'necessities', Smith means 'not only the commodities which are indispensably necessary for the support of life ... but whatever the custom of the country renders it indecent for creditable people, even of the lowest order, to be without'. See also M Mazzucato & R Skidelsky 'Toward a New Fiscal Constitution' *Project Syndicate* (10 July 2020), accessed at [https://www.project-syndicate.org/onpoint/new-fiscal-constitution-job-guarantee-by-mariana-mazzucato-and-robert-skidelsky-2020-07?utm\\_](https://www.project-syndicate.org/onpoint/new-fiscal-constitution-job-guarantee-by-mariana-mazzucato-and-robert-skidelsky-2020-07?utm_):

Today, the key failure of the prevailing economic model ... has been its neglect of public goods. While these are essential to the proper functioning of the economy, the private sector lacks any incentive to supply them. That is why Adam Smith argued in *The Wealth of Nations* that the state bears the duty of furnishing the infrastructure upon which the market economy relies. And as the list of public goods expands to include access to data and digital technologies, we need to become more ambitious about supplying what citizens need to prosper.

<sup>7</sup> J Whittle 'The Development of Agrarian Capitalism: Theory And History' in J Whittle (ed) *The Development of Agrarian Capitalism: Land and Labour in Norfolk, 1440-1580* (2000) 1, 16; B Campbell & M Overton 'A New Perspective on Medieval and Early Modern Agriculture: Six Centuries of Norfolk Farming c.1250-c.1850' (1993) 141 *Past & Present* 38, 96; M Roser 'Life Expectancy' *Our World in Data* (2019), accessed at <https://ourworldindata.org/life-expectancy>.

<sup>8</sup> P Lindert 'When Did Inequality Rise in Britain and America?' (2000) 9 *Journal of Income Distribution* 11, 13, 19; S Kuznets 'Economic Growth and Income Inequality' (1955) 45 *American Economic Review* 1, 19.

<sup>9</sup> R Allen 'Review of Gregory Clark's *A Farewell to Alms: A Brief Economic History of the World*' (2008) 46 *Journal of Economic Literature* 946; S Broadberry, B Campbell, A Klein, M Overton & B van Leeuwen 'British Economic Growth, 1300-1850: Some Preliminary Estimates' (2009) *Working Papers 10009 Economic History Society*.

and improvement to those machines and instruments which facilitate and abridge labour; or of a more proper division and distribution of employment.<sup>10</sup>

On this view, all boats would rise. Smith writes:

In consequence of better machinery, of greater dexterity, and of a more proper division and distribution of work, all of which are the natural effects of improvement, a much smaller quantity of labour becomes requisite for executing any particular piece of work, and though, in consequence of the flourishing circumstances of the society, the real price of labour should rise very considerably, yet the great diminution of the quantity will generally much more than compensate the greatest rise which can happen in the price.<sup>11</sup>

This rosy view – shorn of the moral and political theory necessary to support Smith’s own account of the conditions required for a just and fair social order – became the orthodox position of most economists. Indeed, Schumpeter’s 20th-century nostrum of creative disruption rests on the presupposition that ‘the working class is ... compensated for initial sufferings, incident to the introduction of a labor-saving machine[s], by favorable ulterior effects.’<sup>12</sup>

This orthodox view faced challenges from the outset by such classical economists as David Ricardo. In 1821, Ricardo recognised that technological unemployment had an inescapably negative role to play in modern economic theory. In his *Principles of Political Economy and Taxation*, Ricardo declares that his views on the relationship between technological advances and unemployment had shifted dramatically:

Ever since I first turned my attention to questions of political economy, I have been of opinion, that such an application of machinery to any branch of production, as should have the effect of saving labour, was a general good, accompanied only with that portion of inconvenience which in most cases attends the removal of capital and labour from one employment to another ... [That inconvenience remained] unaltered, as far as regards the landlord and the capitalist ... [but] the substitution of machinery for human labour, is often very injurious to the interests of the class of labourers.<sup>13</sup>

This injury takes the form of both lower wages and fewer employment opportunities. After running the numbers, Ricardo concludes:

All I wish to prove, is that the discovery and use of machinery may be attended with a diminution of gross produce; and whenever that is the case, it will be injurious to the labouring class, as some of their number will be thrown out of employment, and [the working] population will become redundant, compared with the funds [and wealth that exist] to employ it.<sup>14</sup>

But before we rush headlong into the next series of theoretical contributions, it’s worth defining what ‘technological employment’ is – for it is but one form of unemployment amongst many. Let’s look at some of the others. Frictional unemployment refers to the individual mobility of workers between jobs. Structural unemployment flows from the weakening of particular sectors of an economy or the diminished need for certain professions. Cyclical unemployment arises from rather temporary contractions in economic

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<sup>10</sup> A Smith *The Wealth of Nations* (1776) (RH Campbell and AS Skinner)(eds)(1976) 455–456.

<sup>11</sup> *ibid.* at 338.

<sup>12</sup> J Schumpeter *History of Economic Analysis* (1954, 2006 edition) 652.

<sup>13</sup> D Ricardo *Principles of Political Economy and Taxation* (1821) 282.

<sup>14</sup> *ibid.* at 288.

activity – often in relation to the boom and bust nature of capitalist business cycles. *Your Dictionary* defines ‘technological unemployment’ in the following manner:

Unemployment caused by technological advances. [Such advances] embrace machines and software substituting for human labor, advances in efficiency negating the need for friction-based jobs, and increased data availability undermining professions that rely on information asymmetry.<sup>15</sup>

That’s a rather contemporary spin. A more classical, expansive definition, according to the *Oxford English Dictionary*, takes the following form:

Unemployment due to technical progress. This [form of unemployment] applies to particular types of workers whose skill is made redundant because of changes in methods of production, usually by substituting machines for their services. Technical progress does not necessarily lead to a rise in overall unemployment.<sup>16</sup>

Until recently, the last phrase – ‘does not necessarily lead to a rise in overall unemployment’ – appeared to have held true in developed economies. Of course, while employment might have remained level or even dropped to unprecedented lows in 2019, technological unemployment has undoubtedly led to wage stagnation and ‘real wage’ diminution over time. A middle-class employee in the United States earning \$53 000 per annum in 1980 earned roughly \$50 000 per annum when adjusted for inflation in 2019. The demise of unionised labor and manufacturing in advanced economies means lower wages for the working class and the need to piece together several service-sector jobs just to stay above the poverty line. But that’s hardly a new phenomenon either. As Riccardo Campa writes:

Owing to technological innovation, entire economic sectors have been largely emptied of their workforce. The transition from traditional agriculture to intensive agriculture, through the use of agricultural machinery, herbicides, fertilizers, fungicides ... has led to demographic emptying of the countryside. The evaporation of jobs in the primary sector of the United States of America offers impressive numbers: in 1900 41% of the population was employed in agriculture, a century later, in 2000, only 2% of Americans still worked in same sector ... A similar phenomenon was observed in the secondary sector, or manufacturing, at the turn of the twentieth and twenty-first century. In the United States, the ratio between employment in the factories decreased from 22.5% in 1980 to 10% today and is expected further decline to below 3% by 2030. Similar situations can be observed in other industrialized countries, including Italy. This emptying of whole sectors of the economy was accompanied by a migration of the workforce from one sector to another. A first migration was observed from agriculture to manufacturing, a visible phenomenon because it also led to a massive migration from rural to urban areas. A second migration of the labor force, less visible but equally significant, occurred from the manufacturing sector to the services sector.<sup>17</sup>

Put somewhat differently, while permanent technological unemployment exists in industrialised countries,<sup>18</sup> its current face takes the form of low-wage positions in which

<sup>15</sup> ‘Technological Unemployment’ *Your Dictionary* (2019), accessed at <https://www.yourdictionary.com/technological-unemployment#wiktionary>.

<sup>16</sup> ‘Technological Unemployment’ *Oxford English Dictionary* (2019), accessed at <https://www.oxfordreference.com/view/10.1093/oi/authority.20110803102813279>.

<sup>17</sup> R Campa *Still Think Robots Can’t Do Your Job? Essays on Automation and Technological Unemployment* (2018) 19–21 citing C Carboni ‘Partita Tecnologica Sul Lavaro’ *Il Sole* (1 May 2015).

<sup>18</sup> One in five Americans live in relative poverty. United States Department of Health and Human Services (HHS) figures for the Federal Poverty Level in 2018 set the bar at \$12,140 for single-person households and \$25,100 for four-person households. ‘2018 Poverty Guidelines’ *United States Department of Health*

the labour content of the work itself has shrunk substantially.<sup>19</sup> The fragmentation of ‘work’ and the downward pressure on income has had a palpable, often devastating effect, on the middle class, working class and working poor in most industrialised nations. Simply because the entire global economy prior to 2020 had not yet become a socio-economic trainwreck did not mean that technological unemployment, and permanent technological unemployment, do not constitute genuine, measurable, phenomena. (The immediate effects of COVID-19 mean that we can see large-scale permanent technological unemployment in real time. Both economists and the US Federal Reserve’s Beige Book are already able to provide reliable figures of what we can expect.<sup>20</sup>)

The public record of the devastating effect of technological unemployment dates back to the beginning of the industrial revolution itself. As early as 1767, nine years prior to Smith’s magnum opus, James Steuart published *An Inquiry into the Principles of Political Economy*. In Chapter 19 – entitled ‘Is the Introduction of Machines into Manufactures Prejudicial to the Interest of a State, or Hurtful to the Population?’ – Steuart concludes that rapid industrial innovations and the sudden mechanisation of some segment of a good’s production will create technological unemployment. In order to prevent the rending of the social fabric, and potentially, revolution, he argued in favour of public policies designed to foster the absorption of redundant workers into new forms of employment. While Steuart maintained that the advantages of innovation outweighed its harms, he contended that markets alone, without state intervention, could not be expected to solve the problems created by technological unemployment nor maintain a positive ‘social’ credit/debit ledger.<sup>21</sup> Similarly, John Stuart Mill, in *Principles of Political Economy*, states that ‘[a]ll

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*and Human Services* (7 February 2018), accessed at [www.hhs.gov](http://www.hhs.gov). The mind-boggling tent cities that have mushroomed around incredibly wealthy big tech cities on the west coast reflect an inability to create low-income housing stock, as opposed to unemployment per se.

<sup>19</sup> Despite job insecurity and low wages, the US economy had an unemployment rate of 3.5% in 2019. That figure is the lowest in almost a century and below what economists previously identified as ‘full employment’ – namely 4% unemployment – which accounts for transitory periods of inactivity as opposed to a lack of demand.

<sup>20</sup> ‘Summary of Commentary on Current Economic Conditions by Federal Reserve District’, *The Federal Reserve*, accessed at <https://www.federalreserve.gov/monetarypolicy/beige-book-default.htm>:

Commonly known as the Beige Book, this report is published eight times per year. Each Federal Reserve Bank gathers anecdotal information on current economic conditions in its District through reports from Bank and Branch directors and interviews with key business contacts, economists, market experts, and other sources. The Beige Book summarizes this information by District and sector. An overall summary of the twelve district reports is prepared by a designated Federal Reserve Bank on a rotating basis.

<sup>21</sup> Why must this be so? With the transition from largely agrarian based feudalism to early capitalism, two relatively new phenomena were born: overproduction and unemployment. The efficiency of capitalism as compared to prior economic systems flows from every given market’s never ending search for the perfect equilibrium between supply and demand. However, because no one knows in advance whether the amount of a good produced will be absorbed in its entirety by consumers, overproduction is inevitable. Of course, if overproduction is part and parcel of the behaviour of market participants, then overproduction will have to be met with a combination of lower prices and/or the cutting of costs. Naturally, one such cost of production is labour. To cut labour costs requires the termination of employees. Unlike the locked-in economic arrangements of feudal agrarian systems, capitalism by necessity required some degree of unemployment. As technological innovation (the loom) or business models (the Taylor-like assembly line) or distribution networks (shipping containers) improved, fewer workers would be needed in a given sector or profession. They were made redundant, and their lives significantly disrupted. The social cost of this unemployment and dislocation was extreme – and led to both destruction and minor rebellion. *As a result, politicians*

attempts to make out that the laboring-classes as a collective body can not suffer ... by the introduction of machinery, or by the sinking of capital in permanent improvements, are, I conceive, necessarily fallacious.<sup>22</sup>

After acknowledging Ricardo's analysis, a generation prior, Karl Marx offered one of the first extended accounts of pre-capitalist and early capitalist technological unemployment and its consequences for workers and machines:

In the seventeenth century nearly all Europe experienced workers' revolts against the ribbon-loom, a machine for weaving ribbons and lace trimmings called in Germany Bandmühle, Schnurmühle, or Mühlenstuhl. In the 1630s, a wind-driven sawmill, erected near London by a Dutchman, succumbed to the rage of the mob. Even as late as the beginning of the eighteenth century, saw-mills driven by water overcame the opposition of the people only with great difficulty, supported as this opposition was by Parliament. No sooner had Everett constructed the first woolshearing machine to be driven by water-power [in 1758] than it was set on fire by 100,000 people who had been thrown out of work. Fifty thousand workers, who had previously lived by carding wool, petitioned Parliament against Arkwright's scribbling mills and carding engines. The large-scale destruction of machinery which occurred in the English manufacturing districts during the first fifteen years of the nineteenth century, largely as a result of the employment of the power-loom; and known as the Luddite movement, gave the anti-Jacobin government, composed of such people as Sidmouth and Castlereagh, a pretext for the most violent and reactionary measures. It took both time and experience before the workers learnt to distinguish between machinery and its employment by capital, and therefore to transfer their attacks from the material instruments of production to the form of society which utilizes those instruments.<sup>23</sup>

Of course, the Luddite response to new, large-scale technological unemployment was only an introduction to the rapacious nature of modern capitalism that reflected Marx's true quarry. In a chapter in *Capital* entitled 'Machinery and Large-Scale Industry', Marx takes dead aim at the real tooth and claw consequences of large-scale capitalism on the working poor and the working class:

Here we shall merely allude to the material conditions under which factory labour is performed. Every sense organ is injured by the artificially high temperatures, by the dust-laden atmosphere, by the deafening noise, not to mention the danger to life and limb among machines which are so closely crowded together, a danger which, with the regularity of the seasons, produces its list of those killed and wounded in the industrial battle.<sup>24</sup>

Unlike Stuart or Ricardo or Mill, who might have been content to allow the legal system to manage this systemic disaster as a tort or by ostensibly eliminating the source of the harm entirely, Marx understood that the law in liberal democratic capitalist systems was too often a paper tiger that allowed the strong to run roughshod over the weak:

[A]lthough it is strictly forbidden in ... most factories, that machinery should be cleaned while in motion, it is nevertheless the constant practice in most, if not in all, that the workpeople do, unreprieved, pick out waste, wipe rollers and wheels, etc, while their frames are in motion ... [F]rom this cause only, 906 accidents have occurred during the [first] six months [of 1846].

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*throughout Europe in early stage capitalism occasionally promulgated laws designed to limit the deployment of new job-destroying machines in private companies.* This response to the widespread fear of rebellion reflects the level of concern surrounding technological unemployment.

<sup>22</sup> JS Mill *Principles of Political Economy* (1848, 2006 ed) 51.

<sup>23</sup> K Marx *Capital: A Critique of Political Economy* (1867, 1976 ed) 553.

<sup>24</sup> *ibid.* at 552.

Unimpressed by the alleged progress capitalism bestowed upon the poor and the working class, Marx continually returns to the persistent harm of technological unemployment. During his lifetime, Marx witnessed the simplification of labour-intensive work through the aid of innovative machines. Novel heavy-duty equipment allowed relatively strong men to be replaced by women, and then women by an even more vulnerable class – children. The value of this exchange flowed entirely to the owner in the form of both the employment of fewer workers, given the enhanced role played by the novel factory apparatus, and cheaper labour – since women and children were and remain less expensive. The replaced ‘male’ worker received no benefit at all. As Marx notes:

It is supposed to be a great consolation to the pauperized workers that, firstly, their sufferings are only temporary ... and, secondly, machinery only gradually seizes control of the whole of a given field of production, so that the extent and the intensity of its destructive effect is diminished. The first consolation cancels out the second.<sup>25</sup>

The only meaningful recourse, according to Marx, was control of the means of production.

Leaving aside the depredations and mass exterminations experienced by workers, farmers and other disposable groups in the Soviet Union, China and other ‘notionally’ communist states, South Africans generally have not benefitted from the political control exercised by unions or members of the communist party. To the extent that members of the Congress of South Africa Trade Unions (Cosatu) and the South African Communist Party (SACP) have been part of the ruling tripartite alliance with the African National Congress (ANC) since 1994, the primary material benefits have flowed to:

- a narrow band of unionised workers in the private sector, as opposed to other members of the working class, the working poor and those persons living in abject poverty; and
- public sector union members who form a large part of the alliance’s base.

While South Africa annually spends an enormous portion of the fiscus on education, health and other socio-economic goods (most of that goes to public sector wages), here too a ‘worker friendly’ or ‘public employee friendly’ government has produced results that have left the majority of South Africans without the skills required in a 21st-century economy. Meanwhile state-owned enterprises (SOEs) designed to drive economic development and to create a vibrant black middle class have, at least, managed to accomplish the latter. At the same time, the SOEs, as we have already seen, have been so poorly managed that a sizable number have been placed in curatorship or business rescue due to debts that run (collectively) into the trillions of rand.<sup>26</sup> ‘Technological unemployment’ – no spoiler alert required – will be the final nail in this economy’s coffin.<sup>27</sup>

<sup>25</sup> *ibid.* at 565.

<sup>26</sup> The Department of Social Development so fully abdicated responsibility for social grants that tens of millions of South Africans failed to receive life-sustaining grants. The corrupt relationship between Cash Paymasters and the Minister of Social Development has been the subject of roughly a dozen Constitutional Court judgments and orders. *Black Sash Trust v Minister of Social Development* [2017] ZACC 8, 2017 (3) SA 335 (CC). In this iteration of *Black Sash Trust*, the Constitutional Court found that a Minister could be held directly accountable for court costs associated with litigation regarding adverse findings of maladministration.

<sup>27</sup> Technological unemployment is hardly an emerging economy emergency. As Campa notes:

Italy is second in Europe and fourth in the world in terms of robot density, and among the G7 it is the nation with the highest rate of youth unemployment. Establishing the ultimate causes of unemployment is a very difficult task, and—as we said—the notion itself of technological unemployment’ is controversial ... Mainstream economics tends to correlate the high rate of unemployment in Italy with the low

### C. Modern Theories of Technological Unemployment

Of course, workable theoretical and pragmatic options other than workers controlling the means of production have long been on offer from other political economists who recognised that ‘technological unemployment’ was an inevitable function of market and quasi-market systems. The doyen of this group of economists, John Maynard Keynes, recognised ‘technological unemployment’ as a legitimate concern (‘a disease’ in his parlance). However, in 1930, he believed that this disease might be cured by the correct economic policies. Given that Keynes was writing at the very outset of the Great Depression, his diagnosis of the aetiology of the disease is worth laying out in full:

We are suffering just now from a bad attack of economic pessimism. It is common to hear people say that the epoch of enormous economic progress which characterised the nineteenth century is over; that the rapid improvement in the standard of life is now going to slow down – at any rate in Great Britain; that a decline in prosperity is more likely than an improvement in the decade which lies ahead of us. I believe that this is a wildly mistaken interpretation of what is happening to us. We are suffering, not from the rheumatics of old age, but from the growing-pains of over-rapid changes, from the painfulness of readjustment between one economic period and another. The increase of technical efficiency has been taking place faster than we can deal with the problem of labour absorption; the improvement in the standard of life has been a little too quick; the banking and monetary system of the world has been preventing the rate of interest from falling as fast as equilibrium requires.

The disease, as both Ricardo and Marx would have agreed over a century earlier, is none other than ‘technological unemployment’:

For the moment the very rapidity of these changes is hurting us and bringing difficult problems to solve. Those countries are suffering relatively which are not in the vanguard of progress. We are being afflicted with a new disease of which some readers may not yet have heard the name, but of which they will hear a great deal in the years to come – namely, *technological unemployment*. This means unemployment due to our discovery of means of economising the use of labour outrunning the pace at which we can find new uses for labour.

According to Keynes – unlike Marx or Ricardo – this disease would not kill us, but only make us stronger. Why and how? Keynes explains that the Great Depression (of the 1930s) constitutes

... only a temporary phase of maladjustment. All this means in the long run is that *mankind is solving its economic problem*. I would predict that the standard of life in progressive countries one hundred years hence will be between four and eight times as high as it is. There would be nothing surprising in this even in the light of our present knowledge. It would not be foolish to contemplate the possibility of a far greater progress still ... I draw the conclusion that, assuming no important wars and no important increase in population, the economic problem may be solved, or be at least within sight of solution, within a hundred years. This means that the economic problem is not - if we look into the *future – the permanent problem of the human race*.

It’s not hard to see what Keynes got right. And it’s also not hard to see what he got terribly wrong.

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flexibility of the labor market and the high cost of manpower. Little attention is paid to the impact of artificial intelligence and robots on the level of employment.

R Campa ‘Workers and Automata: A Sociological Analysis of the Italian Case’ in *Still Think Robots Can’t Do Your Job? Essays on Automation and Technological Unemployment* (2018) 116–132.

First, the devastation of World War I (the war to end all wars)<sup>28</sup> was outdone by the mass slaughter of humanity in World War II.<sup>29</sup> Despite Keynes's rosy view of human nature and progress, the world has not seen a significant cessation of military conflict. While major wars between the most powerful nations may have stopped during the Cold War, they were simply supplanted by proxy wars of almost equal devastation elsewhere. As one surveys the globe today, we are in a state of perpetual war motivated by sectarian strife,<sup>30</sup> by new colonial expansion, by narco-states, by puerile nationalism, by religious fundamentalism, and by non-state actors and paramilitary groups disinterested in the formation of a functional state.<sup>31</sup> The weakness, if not outright withdrawal, of multilateral institutions from fruitful engagement in international and internecine conflicts suggests that these varied forms of deadly strife will not end anytime soon.

Second, the global population in 1930 measured a mere two billion.<sup>32</sup> In 2020, the world groans under the weight of nearly eight billion inhabitants.<sup>33</sup> Nearly half of the world's population – more than three billion people – live on less than \$2.50 a day<sup>34</sup> and more than 1.3 billion live in extreme poverty – less than \$1.90 a day.<sup>35</sup> One billion children

<sup>28</sup> The *Encyclopaedia Britannica* cites the death toll from the First World War as 37 468 904. 'World War I: Killed, Wounded and missing' *Encyclopaedia Britannica* (2019), accessed at <https://www.britannica.com/event/World-War-I/Killed-wounded-and-missing>.

<sup>29</sup> The Second World War has the dubious honour of the Guinness World Record for the highest death toll from a war, an estimated 56.4 million. ('Highest Death Toll from Wars' *Guinness World Records* (2019), accessed at <https://www.guinnessworldrecords.com/world-records/highest-death-toll-from-wars/>.)

<sup>30</sup> I Begum 'Sectarian Strife in Pakistan: A Legacy of Nineteen Eighties' (2012) 17(2) *Pakistan Perspectives* 63; K Laachir 'Sectarian Strife and 'National Unity' in Egyptian Films: A Case Study of Hassan and Morqos' (2011) 31(1) *Comparative Studies of South Asia, Africa and the Middle East* 217; C McGrath 'Sectarian Strife Threatens Egypt's New Epoch' (2011) 428 *Middle East* 22; A Graham-Yool 'Belfast, 20-23 October 1993' (1994) 52(2) *Antioch Review* 286; G Jenkins 'Nationalism and Sectarian Violence in Liverpool and Belfast, 1880s-1920s' (2010) 78 *International Labor and Working Class History* 164; Y El-Rashidi 'At Strife-Torn Campus in Beirut, Students Return to Class Amid Sectarian Tensions' *Chronicle of Higher Education* (16 February 2007); R Collard 'Iraqi Victory over ISIS in Tikrit Could Worsen Sectarian Strife' *Time.com* (3 March 2015).

<sup>31</sup> C Sandu 'The South Sudan Coup: A Political Rivalry that Turned Ethnic' (2014) 7 *Conflict Studies Quarterly* 49.

<sup>32</sup> *World Population by Year*, accessed at <https://www.worldometers.info/world-population/world-population-by-year>. That number reflects a 100% growth in a century. It also reflects a 300% increase of two centuries. Of course, such growth was largely a function of advances in technology for agriculture and manufacturing, and medical discoveries from the late 19th century onwards that prevented early-stage mortality at the same time that it elongated lives.

<sup>33</sup> *ibid.* Another fascinating statistic is population density – which has increased from 17 persons per square km to 52 persons per square km. The density of megacities has made it impossible for many nation-states to supply basic goods and services. As we saw in Chapter II, natural resources such as water are hit or miss propositions in cities like Mexico City and Jakarta.

<sup>34</sup> '11 Facts about Global Poverty' *DoSomething.org* (2020), accessed at <https://www.dosomething.org/facts/11-facts-about-global-poverty>. At least 80% of humanity lives on less than \$10 a day. More than 80% of the world's population lives in countries where income differentials are widening. The poorest 40% of the world's population account for 5% of global income. The richest 20% account for three-quarters of world income. Of course, an enormous number of individual decisions – whilst still accounting for gender inequality – have led to both overpopulation and poverty. People are hard-wired to reproduce: It's as ludicrous to lay these numbers at the feet of capitalism as it would be to blame the caste system or communism.

<sup>35</sup> *ibid.*

worldwide live in poverty and 22 000 children die each day due to penury.<sup>36</sup>

How could the most important economist of the 20th century be so blind to these possibilities given the depredations of colonialism and the devastation of World War I? Keynes provides the following largely unassailable account of human history:

This ... lack of progress [until the 19th century] ... was due to two reasons—to the remarkable absence of important technical improvements and to the failure of capital to accumulate. The absence of important technical inventions between the prehistoric age and comparatively modern times [1800 CE] is truly remarkable. Almost everything which really matters and which the world possessed at the commencement of the modern age was already known to man at the dawn of history. Language, fire, the same domestic animals which we have today, wheat, barley, the vine and the olive, the plough, the wheel, the oar, the sail, leather, linen and cloth, bricks and pots, gold and silver, copper, tin, and lead ... iron was added to the list before 1000 BCE, along with banking, statecraft, mathematics, astronomy, and religion ... The modern age opened; I think, with the accumulation of capital which began in the sixteenth century ... From that time until today the power of accumulation by compound interest, which seems to have been sleeping for many generations, was re-born and renewed its strength ... [T]he power of compound interest over two hundred years is such as to stagger the imagination ... From the sixteenth century, *with a cumulative crescendo after the eighteenth*, the great age of science and technical inventions began, which since the beginning of the nineteenth century has been in full flood – coal, steam, electricity, petrol, steel, rubber, cotton, the chemical industries, automatic machinery and the methods of mass production, wireless, printing, Newton, Darwin, and Einstein, and thousands of other things and men too famous and familiar to catalogue. What is the result? In spite of an enormous growth in the population of the world, which it has been necessary to equip with houses and machines, the average standard of life in Europe and the United States has been raised ... about fourfold. The growth of capital has been on a scale which is far beyond a hundredfold of what any previous age had known. Think of this in terms of material things – houses, transport, and the like. At the same time technical improvements in manufacture and transport have been proceeding at a greater rate in the last ten years than ever before in history ... We may be on the eve of improvements in the efficiency of food production as great as those which have already taken place in mining, manufacture, and transport. In quite a few years – in our own lifetimes I mean – we may be able to perform all the operations of agriculture, mining, and manufacture with a quarter of the human effort to which we have been accustomed.<sup>37</sup>

Again, so much of what Keynes anticipated came to pass. However, his expectation that each member of his grandchildren's generation would work three hours a day and no more than five days a week did not. Despite the great destruction and levelling of wealth (what Keynes calls 'capital accumulation') due to two World Wars, the Great Depression, and the Spanish flu, several industrialised western nations actually managed to give birth to the modern welfare state. Keynes did not expect nor did his theories support those policies that have led to an accelerated concentration of wealth in the hands of the few. Nor could his strong egalitarian view of statecraft be squared with governance by elites (irrespective of party) whose trade policies led to (a) the evisceration of the working class in some polities, (b) the acceleration of economic control of technological advances in a tiny number of hands, and (c) the passage of laws and control of social institutions that

<sup>36</sup> *ibid.*

<sup>37</sup> J Keynes 'Economic Possibilities for our Grandchildren (1930)' in J Keynes *Essays in Persuasion* (1930) 358. (Emphasis added)

advance and entrench the narrow pecuniary interests of the elites (the top 10% and 1%) at the expense of an educated middle class.<sup>38</sup>

#### D. A More Powerful, Contemporary Theory of Permanent Technological Unemployment – On Productive Effects, Displacement Effects and Reinstatement Effects

Unlike other assessments of the global economic order, this book is not primarily concerned with accumulations of wealth that lead to gross inequality and distortions in the political structures of modern liberal democracies: though the epilogue of this work explores – as did Chapter II – how governance by elites in advanced and nascent democracies turns more or less inclusive political, social and economic institutions into extractive political, social and economic institutions that ultimately results in the collapse of the state (let alone any semblance of a functional democracy.)<sup>39</sup> Thomas Picketty's arguments on this subject – and the contributions of others writing in a similar vein – have already been well-ventilated.<sup>40</sup>

Of course, a parallel of sorts exists. The premise of many capitalist orders is that accumulated profits will naturally be reinvested in a manner that increases overall growth from the top to the bottom. Thus, labour wages *should* rise as the economy expands. However, as Picketty notes, when overall growth is relatively low, then the return on investment to those who have inherited wealth accumulates amongst the top 10% and 1% of a polity and little flows to the rest of society in terms of productivity-based income.

Before moving on, however, two other noteworthy parallels in the storylines exist. First, Picketty identifies the same levelling in the disparity in wealth between 1930 and 1980 as function of the Great Depression, World War I and World War II and a greater commitment to redistribution through the creation of a social welfare state. Second, the end of that period has been followed by an increase in wealth inequality assisted, simultaneously, by union-busting laws and politics, as well as trade policies that substituted working-class domestic labour with cheap foreign labour. Furthermore, there has been the reinvestment of a significant portion of the elite's wealth in technologies that have supplanted or diminished working-class and middle-class employment (or some portion of the tasks which their jobs require), which quite naturally has diminished the quality of working-class and middle-class life.

However, the task of this book is different – not narrower, just different. Its task is to better understand the phenomenon of technological unemployment so that we possess a clearer sense of what is likely to happen in the future.<sup>41</sup>

<sup>38</sup> P Turchin *War and Peace and War: The Rise and Fall of Empires* (2006); P Turchin & S Nefedov *Secular Cycles* (2009); P Turchin *Ages of Discord: A Structural-Demographic Analysis of American History* (2016).

<sup>39</sup> As the last decade – and very recent events – make clear, both the United States and South Africa are already pretty far down this path. Thin, and hotly contested, victories for a minimalist account of the rule of law hardly count in either country's favour. As I note elsewhere, given that 50 of the world's 70 democracies are also deemed to be 'flawed' means that they are in good company.

<sup>40</sup> T Picketty *Capital in the Twenty-First Century* (2014).

<sup>41</sup> Highly likely, but not strictly necessary under some set of iron laws of history. The means of forestalling this eventuality are discussed later in this chapter and have already been explored at a relatively high level of abstraction in Chapter II, Section B.

Technological advances, technological innovation and technological unemployment have not been solely pernicious developments over the past 250 years. Quite the contrary. As Kharas and Hamel wrote for the Brookings Institution in 2018:

Something of enormous global significance is happening almost without notice. For the first time since agriculture-based civilization began 10,000 years ago, the majority of humankind is no longer poor or vulnerable to falling into poverty. By our calculations, as of this month, just over 50 percent of the world's population, or some 3.8 billion people, live in households with enough discretionary expenditure to be considered 'middle class' or 'rich.'<sup>42</sup>

Moreover, thanks predominantly to China's efforts – and its own rise out of 20th century penury – the UN's first Millennium Development Goal of halving the number of people living in extreme poverty by 2015 was met.<sup>43</sup> With an array of marvellous achievements and meaningful prosperity for more than half the denizens of the planet (inclusive of a working class and state welfare programmes for the poor), technological innovation has enhanced our collective lot. It's a state of affairs that even early advocates (and critics) of market economics could not possibly have dreamt up.

Of course, these developments have not been unalloyed goods. The statistics above and the brutal history of the past two centuries bear that out. (Indeed, I would argue that not only is every nation born and bathed in blood, but that, following Peter Turchin, democracy and war are flipsides of the same coin.<sup>44</sup>) The question then is whether the benefits of novel technological advances will continue to flow primarily to the wealthy (who have rarely had a hand in shaping a new technology) or whether they will be more evenly shared within polities – given that most citizens play some role – however small – in the development and the maintenance of both the political institutions and economic institutions of a nation.

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<sup>42</sup> H Kharas & K Hamel 'A Global Tipping Point: Half the World is Now Middle Class or Wealthier' *The Brookings Institute* (27 September 2018), accessed at <https://www.brookings.edu/blog/future-development/2018/09/27/a-global-tipping-point-half-the-world-is-now-middle-class-or-wealthier/>

Our 'middle class' classification was first developed in 2010 and has been used by many researchers. While acknowledging that the middle class does not have a precise definition that can be globally applied, the threshold we use in this work has the following characteristics: those in the middle class have some discretionary income that can be used to buy consumer durables like motorcycles, refrigerators, or washing machines. They can afford to go to movies or indulge in other forms of entertainment. They may take vacations. And they are reasonably confident that they and their family can weather an economic shock – like illness or a spell of unemployment – without falling back into extreme poverty.

See also H Kharas 'The Emerging Middle Class in Developing Countries' *OECD Development Centre Working Paper #285* (2010), accessed at <https://www.oecd.org/dev/44457738.pdf>. Of course, the COVID-19 pandemic was exactly the kind of setback that Kharas and Hamel thought could undermine those stats – though overall global growth continued through 2019. Moreover, the many shakeouts predicted in this book – without multilateral intervention by most states – could likewise undermine such progress. The long arc of history may bend toward justice, or we could wind up living on the periphery. It's King vs Gibson.

<sup>43</sup> China accounted for 90% of the number of people lifted out of extreme poverty. China also benefitted – for a time – from a one child policy: fewer mouths to feed, fewer jobs that needed to be filled. Ultimately, however, a new generation of children were required to care for the old. It still begs the uncomfortable question as to why we seem to fail to draw a connection between the four-fold increase in population over the last 100 years and the despoilment of the planet.

<sup>44</sup> P Turchin *Ages of Discord: A Structural-Demographic Analysis of American History* (2016).

For this book's purposes, the question is how best to understand technological advancement, the effects of such advancement upon labour and capital and more recent trends shaping our future. While the next section of this book tells the human story of technological unemployment from 1800 onwards, this section limits itself to theories of technological unemployment.

Let's say Ricardo, Marx and Keynes were each correct to a point. Inevitably – returning again to Arendt – their limited understanding of the political economies of their time meant that some of their inductions were flat-out wrong. So, does a more powerful explanatory paradigm exist? The recent work of Acemoglu and Restrepo suggests that it does. In one of their latest collaborations, 'Automation and New Tasks: How Technology Displaces and Reinstates Labor', Acemoglu and Restrepo explain how:

- automation drives development or how technology, capital and labour increase productivity;
- technology and capital displace labour;
- technology and capital *can* reinstate and enhance labour; and
- technology and capital over the past 30 years, have, *in fact*, reshaped the workforce in a manner that has led to a labour displacement effect without an improved reinstatement effect.<sup>45</sup>

It's easy enough to understand how capital investment in new technologies enables human labour to be automated and for far more goods and services to be produced more cheaply. A classic if overused example is the spinning wheel, which appeared in China around 500 CE, migrated to India around 1000 CE and eventually made its way to early renaissance Europe. (Hand distaffs can be dated back to 5000 BCE in Egypt.) However, with demand for textiles high, 18th-century innovations such as the spinning jenny, the water frame and the spinning mule enabled the relocation of textiles from domestic quarters to factories by the early 19th century. As we have seen, and will further discuss, this displacement did not go uncontested, with livelihoods and lifespans for many (in early capitalist economies) shrinking for a brief period of time. The record, however, suggests that for many craftspersons other new technologies eventually led to reinstatement effects and higher standards of living.

In Acemoglu and Restrepo's terminology, the automation in question – the larger, faster, more powerful factory-based spinning wheel – allows for the adoption of a novel technology that enables capital (the cost of creating the novel technology and the production of the technology itself) to replace labour. That's the *displacement effect*. But there may well be a net gain. For '[b]y allowing a more flexible allocation of tasks to factors, automation technology also increases productivity, and via this channel, which we call the *productivity effect*, it contributes to the demand for labour in non-automated tasks.'<sup>46</sup> In short, productivity is increased (potentially) by the efficiency and the efficacy of the technology for society as a whole, as well as the movement of labour to other novel tasks that have not as yet been automated and that are more complex.

The second upside of the productivity effect is that it has, historically, led to *reinstatement effects*. As Acemoglu and Restrepo write:

<sup>45</sup> D Acemoglu & P Restrepo 'Automation and New Tasks: How Technology Displaces and Reinstates Labor' (2019) 33 (2) *Journal of Economic Perspectives* 3.

<sup>46</sup> *ibid.* at 4.

The history of technology is not only about the displacement of human labor by automation technologies. If it were, we would be confined to a shrinking set of old tasks and jobs, with a steadily declining labor share in national income. Instead, the displacement effect of automation has been counterbalanced by technologies that create new tasks in which labor has a comparative advantage. Such new tasks generate not only a positive productivity effect, but also a *reinstatement effect* – they reinstate labor into a broader range of tasks and thus change the task content of production in favor of labor. The reinstatement effect is the polar opposite of the displacement effect and directly increases the labor share [of productivity] as well as labor demand.<sup>47</sup>

All boats rise. More importantly, for our purposes, the wages paid labour rise. Of course, the route the boat takes will rarely be a straight line.

Speaking of boats, the shipping container has always held this author's fascination. This post-World War II complex crate made the movement of large amounts of goods possible by first placing the crate on 18-wheelers, then from port directly on to ships that cross the oceans before anchoring in port, from whence they are placed back on to 18-wheelers. Indeed, it's still true that far more goods loaded in Baltimore can reach Johannesburg by ground and sea faster than the same quantum of goods that must navigate the often-patchy roads to Johannesburg from Maseru, Lesotho. The interesting question for an innovation that stakes a legitimate claim for making truly global trade possible,<sup>48</sup> is what happened to all those longshoremen who had previously worked the docks and were made redundant by the shipping container? Aside from redundancy, perhaps nothing immediate occurred, other than the loss of one form of laborious employment for employment in another trade. That is, given the unique nature of the period in which the container was invented – around 1953 – it's highly likely that other new technologies in a booming world economy absorbed the displaced labour in a rather short period of a time. Along with displacement and then reinstatement, union workers might even have experienced a rather immediate increase in wages associated with enhanced productivity. Indeed, in the United States, with the introduction of the GI Bill, veterans of the armed services who might not have gone to college had university tuition paid for them by the state. That's but one example of the somewhat unique circumstances of the half century that lasted from the early 1930s to the early 1980s.

I paid my way through college at Wesleyan University and began a generational shift in my family's class by unloading these shipping containers in a refrigerated fruit and vegetable warehouse (and union shop) in Hunts Point Market in the South Bronx. However, the 1980s writ large marked a period during which the number of my fellow workers (Teamsters) unloading containers on the docks had already begun to atrophy. Now the story gets interesting. For just as I made my way through and beyond Ivy-covered halls, and entered two different professional classes, the North American Free Trade Agreement (NAFTA) was about to come into effect. A large number of my fellow Americans understood what awaited them. So did Ross Perot. The third party insurgency of this presidential candidate secured 19% of the popular vote in 1992 based upon one policy position – the rejection of NAFTA – and the lived experience of a working class that had already experienced radical deindustrialisation (e.g., the emptying out of the 'rust

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<sup>47</sup> *ibid.*

<sup>48</sup> M Levinson *The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger* (2006); B Cudahy *Box Boats: How Container Ships Changed the World* (2006).

belt<sup>49</sup>) and the offshoring of other labour intensive industries. During this period, it had become clear to many voters – though not expressly acknowledged by the elites who ran the two parties that *presumed* to represent them – that they were on the verge of permanent displacement.<sup>50</sup>

<sup>49</sup> Within a decade, Pennsylvania – excluding the cities of Philadelphia and Pittsburgh on opposites sides of the commonwealth – became the oldest state, by median age, in the Union. When the steel plants disappeared, so did those persons young enough to move on. S High *Industrial Sunset: The Making of North America's Rust Belt, 1969-1984* (2003).

<sup>50</sup> The 50 year arc of history that led the Republican Party to produce the popular wrecking ball now known as former President Trump is relatively well-known. The story begins in 1968 with Richard Nixon's not so silent dog whistle to 'the silent majority'. That successful campaign, followed by his 1972 Electoral College win of 49 of 50 states, broke the Democratic Party's century long, post-Civil War hold on the South. Nixon thereby 'captured' a group of voters who would in the 1980s become known as Reagan Democrats and who would remain loyal foot soldiers on an inexorable 50 year path to the not so silent Trump victory in 2016 and his almost quiet coup, and closely contested loss, in 2020. Reagan's express conviction that government was not the answer, but the problem, sold well with many a 'state's rights' advocate in the South: largely white 'commoners' who had no interest in liberal politics and who felt more than comfortable with the racial/racist status quo on offer. It clearly helps to know that people exist who are worse off than you. T Mosley & S McMahon 'Made Famous By Nixon, The Phrase "Silent Majority" Resurfaces For Trump's 2020 Reelection' *WBUR* (23 July 2020), accessed at <https://www.wbur.org/hereandnow/2020/07/23/what-is-silent-majority-trump-nixon>.

A tale told somewhat less often is the roughly 30 year arc of Bill Clinton's Democratic Party. Clinton learned how not to lose as the Governor of Arkansas. 'Twas little surprise that this malleable pro-North American Free Trade Agreement President tacked hard to the centre after the Republican Newt Gingrich's 'Contract with America' agenda flipped both the House and the Senate to the Republican Party in 1994. Clinton's Democratic Party largely abandoned the left-wing politics it had promoted from the 1930s through the 1980s. Indeed, it took a Socialist-Independent Senator, Bernie Sanders (running as Democrat), to shake at least some Democrats from their dogmatic slumber in the 2016 Democratic Party primaries. But the Democratic Party rejected a true working-class hero in Sanders a second time around and reverted to form with the successful election to President of straight-down-the-middle of the road Joseph Biden in 2020. After a half century at the top of the food chain of success, 'build back better' Biden owes some of his current success to the elites who still run the Clinton Democratic Party. But only some. Thanks to the turnout of African-Americans, suburban white voters and a strong 'get out the vote' campaign in two Georgia special elections, the Democrats reclaimed the White House, the Senate and the House. Demographics may or may not be destiny. But the Democrats now have two to four years to govern without the obstruction of the Republican Party at the federal level.

The country still appears not just split, but dazed and confused, thanks to the implosion of the Republican Party under Donald Trump. How could the world's oldest constitutional democracy almost fall victim to a quiet coup more readily associated with the kinds of regimes that elicited sanctimonious remonstrations regarding the holiness of liberal democratic political and economic institutions? In short, the United States cannot yet practice what it preaches. The 50 and 30 year cycles that have the state engaged in a cold civil war possess all the features associated with kinds of rise and fall of nation-states that we first encountered in Acemoglu and Robinson's institutional analysis in Chapter II. However, Peter Turchin captures the above two accounts more crisply when he claims that the fundamental pathologies that regularly lead to state failure 'are a dark triad of social maladies: a bloated elite class, with too few elite jobs to go around [and thus competition between elites in both parties that represent them]; declining living standards among the general population; and a government that can't cover its financial positions.' G Wood 'The Next Decade Could Be Even Worse: A Historian Believes He Has Discovered Iron Laws That Predict the Rise and Fall of Societies: He Has Bad News' *The Atlantic* (November 2020), accessed at <https://www.theatlantic.com/magazine/archive/2020/12/can-history-predict-future/616993/?>: 'Turchin likens America to a huge ship headed directly for an iceberg: "If you have a discussion among the crew about which way to turn, you will not turn in time, and you hit the iceberg directly." That sickening crunch you now hear—steel twisting,

But this new age of automation would not just deleteriously affect my friends who continued to unload trucks (having been driven from the docks). It would eventually find me. In a laconic job search that explored the possibility of a return to legal practice in the United States, I found that my hard-won credentials were now deemed insufficient or redundant. Artificial intelligence led to looks but no interviews. The work for which I was primarily qualified was that of a low- to mid-level associate. By 2019, a large portion of many of the tasks that I had performed as an attorney as late as 2001 in New York City could now be dramatically simplified if not entirely undertaken by computer programs.<sup>51</sup> Indeed, in July 2019, I discovered that a new form of lawyer had come into existence – neither associate, nor partner. It's known as a document review attorney. Amongst this burgeoning class, the 'staff' document review attorney analyses documents for either litigation or due diligence with the assistance of electronic databases and AI programs capable of identifying critical words or terms. This level of attorney receives much less remuneration than I did upon graduation from law school almost 30 years ago and, the hours (9 to 5) while more humane, are entirely contingent upon the amount of litigation that a firm has undertaken. (Do I know how to use the word search program 'Relativity'? I was asked.) Worse still, the majority of this cohort of attorneys are actually supplied by temporary contract attorney firms – and work for days, weeks and, if lucky, months. It helps to speak Mandarin or some other foreign language. Really. You need a bachelor's degree, a law degree, admission to the state bar and fluency in a foreign tongue to make \$32/hr.

To give you an accurate sense of the devaluation of my 'advanced' skill set, the \$15/hour I made unloading trucks in the South Bronx on a Saturday night (overtime) in the early 1980s is equivalent to \$46.67 in 2020. My work as an attorney – without overtime, without benefits – is now worth two-thirds as much (\$32/hr).

This partial, anecdotal assessment of the future of law finds strong empirical support in the literature. As Susskind and Susskind write:

In preparation for litigation, intelligent search systems now outperform junior lawyer and paralegals in reviewing large sets of documents and selecting the most relevant.' [Brainspace technology – one of dozens of e-discovery tools, of which Relativity remains the best known – possesses the capacity to parse through and analyze data at a rate of more than one million documents per hour, and makes smarter, faster, and more informed decisions.] Commercially available online legal services ... tackle highly complex multi-jurisdictional legal questions and can outperform the best specialists ... In another direction, interest is developing in embedding legal requirements into our social and working lives, so that, for example, automatic compliance with health and safety regulations can be integrated into the design of buildings that can identify and respond when temperatures are above a statutory level. In this

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rivets popping – is the sound of the the ship hitting the iceberg.' *ibid.* The United States hit a big bump in the road when the Electoral College vote was counted in Congress on 6 January 2021. A mob briefly invaded the Capital – incited by a truly lame-duck President who faced impeachment for his actions. But the count subsequently continued, and in the early morning hours, Democrat Joe Biden became President of the United States. The nation may be taking on water, but it has not quite sunk.

<sup>51</sup> B Alarie, A Niblett & A Yoon 'How Artificial Intelligence Will Affect the Practice of Law' (2018) 68 *University of Toronto Law Journal* 106; C Brooks, C Gherhes & T Vorley 'Artificial Intelligence in the Legal Sector: Pressures and Challenges of Transformation' (2020) 13 *Cambridge Journal of Regions, Economy and Society* 135, accessed at <https://doi.org/10.1093/cjres/rsz026>; 'The Law Society Capturing Technological Innovation in Legal Services' *The Law Society* (2017), accessed at <http://www.lawsociety.org.uk/support-services/research-trends/capturing-technological-innovation-report/>.

way, human beings do not need to know the law and make a conscious decision to comply, and consequently, lawyers' direct involvement is not needed.<sup>52</sup>

As a result of all of these technological advances, Susskind and Susskind conclude that 'traditional lawyers will in large part be "replaced by advanced systems, or by less costly workers supported by technology ... or by lay people armed with online self-help tools".'<sup>53</sup>

In the space of a single generation, two very different forms of employment that have paid and paved my way have had their labour content either eliminated entirely or drastically curtailed through technological advances and automation.<sup>54</sup> Of course, retraining is possible. Four university degrees later, this possibility is not only undesirable; it would likely lead to more poorly paid occupations. Of course, I have my present luxurious chair. But it's worth noting that if I needed to look elsewhere, I'd find the cliché – 'baby, it's cold outside' – a harsh reality.

These trends are what drew Acemoglu and Restrepo's attention:

Today too we are witnessing a period of rapid automation. The jobs of production workers are being disrupted with the rise of industrial robots and other automated machinery, while white-collar workers in accounting, sales, logistics, trading, and some managerial occupations are seeing some of the tasks they used to perform being replaced by specialized software and artificial intelligence.<sup>55</sup>

What matters for this book is how this epoch of technological innovation and technological unemployment differs from past eras. To make this appraisal, one must assess the net effect of automation on displacement and productivity. Having undertaken this analysis, Acemoglu and Restrepo arrive at four basic conclusions.

First, pace market enthusiasts, not all new technologies amplify the demand for labour. Where they induce sizeable displacement effects and only a marginal gain in productivity, the space for expansion of the labour market through new deployments of capital is likely to be minimal.

Second, by its very nature, automation creates a displacement effect, and the productivity effect produced by automation in a given industry does not generally result

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<sup>52</sup> R Susskind & D Susskind *The Future of the Professions: How Technology Will Transform the Work of Human Experts* (2015) 69–71. The greater efficiency and efficacy of e-discovery technologies was predicted two decades ago. M Grossman & G Cormack 'Technology-Assisted Review in E-Discovery Can Be More Effective and Efficient than Exhaustive Manual Review' (2001) 17 *Richmond Journal of Law and Technology* 1.

<sup>53</sup> R Susskind & D Susskind *The Future of the Professions: How Technology Will Transform the Work of Human Experts* (2015) 71, citing R Susskind *The End of Lawyers?* (2008) 2.

<sup>54</sup> D Acemoglu & P Restrepo 'Automation and New Tasks: How Technology Displaces and Reinstates Labor' (2019) 33 *Journal of Economic Perspectives* 4, 5:

Although software and computers have replaced labor in some white-collar tasks, they have simultaneously created many new tasks. These include tasks related to programming, design, and maintenance of high tech equipment, such as software and app development, database design and analysis, and computer-security-related tasks, as well as tasks related to more specialized functions in existing occupations, including administrative assistants, analysts for loan applications, and medical equipment technicians.

See also J Lin 'Technological Adaptation, Cities, and New Work' (2011) 93(2) *Review of Economics and Statistics* 554.

<sup>55</sup> D Acemoglu & P Restrepo 'Automation and New Tasks: How Technology Displaces and Reinstates Labor' (2019) 33 *Journal of Economic Perspectives* 4, citing G Graetz & Michaels 'Robots at Work' (2018) 100 *Review of Economics and Statistics* 753.

in a commensurate increase in wages or new forms of work. Labour's share of an industry's value tends to shrink rather than grow.

Third, during the last 30 years, displacement effects have significantly outstripped reinstatement effects. At least one point is pressed throughout this book: namely, that the *acceleration* of automation and diminished new tasks should be of real and immediate concern to policymakers.<sup>56</sup> As we saw above, while Acemoglu and Restrepo were somewhat agnostic in 2019 as to what the acceleration of automation might mean for advanced economies, they had changed their tune by March 2020.<sup>57</sup> The COVID-19 pandemic has removed all doubt – potentially eliminating up to 42% of the jobs of those laid off.<sup>58</sup>

Fourth, their 2019 analysis supports their 2020 conclusions, with this final piercing observation:

*[I]f the origin of productivity growth in the future continues to be automation, the relative standing of labor, together with the task content of production, will decline. The creation of new tasks and other technologies raising the labor intensity of production and the labor share are vital for continued wage growth commensurate with productivity growth. Whether such technologies will be forthcoming depends not just on our innovation capabilities but also on the supply of different skills, demographic changes, labor market institutions, government policies including taxes and research and development spending, market competition, corporate strategies, and the ecosystem of innovative clusters. We have pointed out some reasons why the balance between automation and new tasks may have become inefficiently tilted in favor of the former – with potentially adverse implications for jobs and productivity – and some directions for policy interventions to redress this imbalance.<sup>59</sup>*

If automation and diminished tasks for the labour force should be of concern for well-educated, economically diversified, dynamic, relatively inclusive and wealthy polities, then it's reasonable to draw the conclusion that nascent democracies, such as South Africa – which lack a high degree of educational and economic depth as well as political dynamism and choice – will have difficulty responding to the challenges of automation and permanent technological unemployment in the 21st century.

Again: Acemoglu and Restrepo's 2019 assessment was viewed by many as agnostic as to whether technological innovation's productivity effects would result in displacement effects without meaningful reinstatement effects. By March 2020, they had adopted a much stronger position. In their article – 'The Wrong Kind of AI? Artificial Intelligence and The Future of Labour Demand' – the duo describe the productivity effects of many new forms of AI as just 'so-so' (i.e., not much better than the productivity of the humans who previously undertook these tasks).<sup>60</sup> As a result, the displacement effects of these so-so

<sup>56</sup> *ibid.* (Emphasis added)

<sup>57</sup> D Acemoglu & P Restrepo 'The Wrong Kind of AI? Artificial Intelligence and The Future of Labour Demand' (2020) 13 *Cambridge Journal of Regions, Economy and Society* 25, accessed at <https://doi.org/10.1093/cjres/rsz022> and <https://academic.oup.com/cjres/article/13/1/25/5680462>.

<sup>58</sup> J Barrero, N Bloom & S Davis 'COVID-19 is also a Reallocation Shock' *Working Paper No. 2020-59, Becker Friedman Institute, University of Chicago School of Business* (May 2020) 5. See also Board of Governors of the Federal Reserve System *Beige Book* (27 May 2020), accessed at <https://www.federalreserve.gov/default.htm>.

<sup>59</sup> D Acemoglu & P Restrepo 'Automation and New Tasks: How Technology Displaces and Reinstates Labor' (2019) 33 *Journal of Economic Perspectives* 4. (Emphasis added)

<sup>60</sup> D Acemoglu & P Restrepo 'The Wrong Kind of AI? Artificial Intelligence and The Future of Labour Demand' (2020) 13 *Cambridge Journal of Regions, Economy and Society* 25, accessed at <https://doi.org/10.1093/cjres/rsz022>.

technologies have not seen commensurate reinstatement effects. Profits may be turned, but they have not been sufficient to generate the creation of a sufficient number of novel well-remunerated jobs in growing industries to offset the displacement. Indeed, while pre-pandemic unemployment rates may have been low in the US (and poverty had actually declined to an all-time low in 2019), low end of the spectrum work often consists of simple service sector gigs that do not pay a ‘living wage’ or provide meaningful benefits (healthcare insurance, retirement annuities, and so on). They also fail to provide a platform upon which the children of low-pay workers could expect to pursue a ‘better life’ than their parents (very much part of the myth of the American Dream).

Acemoglu and Restrepo therefore reframe their research and recommendations as follows:

[A] critical question has been largely overlooked: are we investing in the ‘right’ type of AI, the kind with the greatest potential for raising productivity and generating broad-based prosperity? We do not have a definitive answer right now – nobody does. But this is the right time to ask this question while we can still shape the direction of AI research and the future of work.

After describing much of the hype around AI in the mid-20th century,<sup>61</sup> and the overblown promises of overexuberant Elon Musk-type technophiles, they remind us of the standard problem between technological innovation – of which AI is but one platform – and its relationship to employment and to salaries as follows:

The reality of technological change is rather different. Many new technologies – those we call *automation technologies* – are not intended to increase labour’s productivity, but are explicitly aimed at replacing it by substituting cheaper capital (machines) in a range of tasks performed by humans. As a result, automation technologies, by displacing workers from the tasks they were previously performing, always reduce the labour’s share in value added. Put differently, these technologies raise productivity by more than wages and employment. They may even reduce overall labour demand (and thus reduce wages, employment or both).<sup>62</sup>

The last sentence is critical for understanding the development of Acemoglu and Restrepo’s agnosticism about technological innovation into an explicit concern about the vast bulk of contemporary technological innovation and its deleterious effects on labour. Again: most technological innovation isn’t brilliant or truly game-changing or even genuinely task-augmenting, it’s ‘meh’ [or in their parlance, ‘so-so’.] Think about how many crappy apps you have on your fancy toy of a phone. Somehow, I have managed to rack up 162 apps

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[org/10.1093/cjres/rsz022](https://academic.oup.com/cjres/article/13/1/25/5680462) and <https://academic.oup.com/cjres/article/13/1/25/5680462>.

<sup>61</sup> About the nature of AI and the initial hype, they write:

Human (or natural) intelligence comprises several different types of mental activities. These include simple computation, data processing, pattern recognition, prediction, various types of problem solving, judgment, creativity, and communication. Early AI, pioneered in the 1950s by researchers from computer science, psychology and economics, such as Marvin Minsky, Seymour Papert, John McCarthy, Herbert Simon and Allen Newell, sought to develop machine intelligence capable of performing all of these different types of mental activities. The goal was nothing short of creating truly intelligent machines. Herbert Simon and Allen Newell, for example, claimed in 1958 ‘there are now in the world machines that think, that learn and that create. Moreover, their ability to do these things is going to increase rapidly until – in a visible future – the range of problems they can handle will be coextensive with the range to which the human mind has been applied.

ibid. citing N Nilsson *The Quest for Artificial Intelligence: A History of Ideas and Achievements* (2009) and T Forester *The Information Technology Revolution* (1985) 86.

<sup>62</sup> ibid.

on my iPhone. I only use one social media platform for its intended purpose – LinkedIn. Another platform, WhatsApp, serves merely as an alternative means of sending messages or phoning friends – and is thus unnecessary. (It’s now unwanted given Facebook’s intention to eliminate WhatsApp’s double encryption – and to use highly personal information in the same manner it uses Facebook to sell advertising.) My iPhone 8 carries 10 apps that I actually use: iTunes, Kindle, iBooks, Nedbank’s Banking App, FNB’s Banking App, Uber, \_sePush (which warns of brownouts or loadshedding by Eskom), Discovery Health Insurance, a camera and an alarm. All the other apps are junk or unnecessary duplicates of applications found and used on my laptop. To demonstrate just how ‘so-so’ this trillion-dollar company has made my life, when I am in New York, as opposed to Johannesburg, I use an inexpensive ‘burner’ with a cheap and unlimited calling plan. I only ‘need’ the iPhone for using Uber or making contact with friends back in South Africa. ‘So-so’ quickly becomes ‘so what?’ However, the broader social ramifications of so-so or so-what technology such as an iPhone are profound:

[C]ontrary to popular claims that the future of labour is threatened by ‘brilliant’ new technologies, the greater danger for labour comes from technology that is not raising productivity sufficiently. In particular, if new automation technologies are not great but just ‘so-so’ (just good enough to be adopted but not so much more productive than the labour they are replacing), there is a double jeopardy for labour – there is a displacement effect, taking passed away from labour, but no powerful productivity gains redressing some of the decline in labour demand generated by the displacement effects.<sup>63</sup>

As for the apps that I do use on my so-so iPhone, I actually know that two have been labour displacing: my banking apps. Two years ago, First National Bank (FNB) had a large number of branches in Johannesburg. A year ago, they were down to half the number of branches. The branch that I used had avoided elimination but was roughly 25% of the size of the prior branch and had a shoestring staff of two ‘basic’ banking service providers and a bank manager. EFTs and other banking services once provided by branches can now be easily replicated on my phone. The jobs at the eliminated branches? Gone.

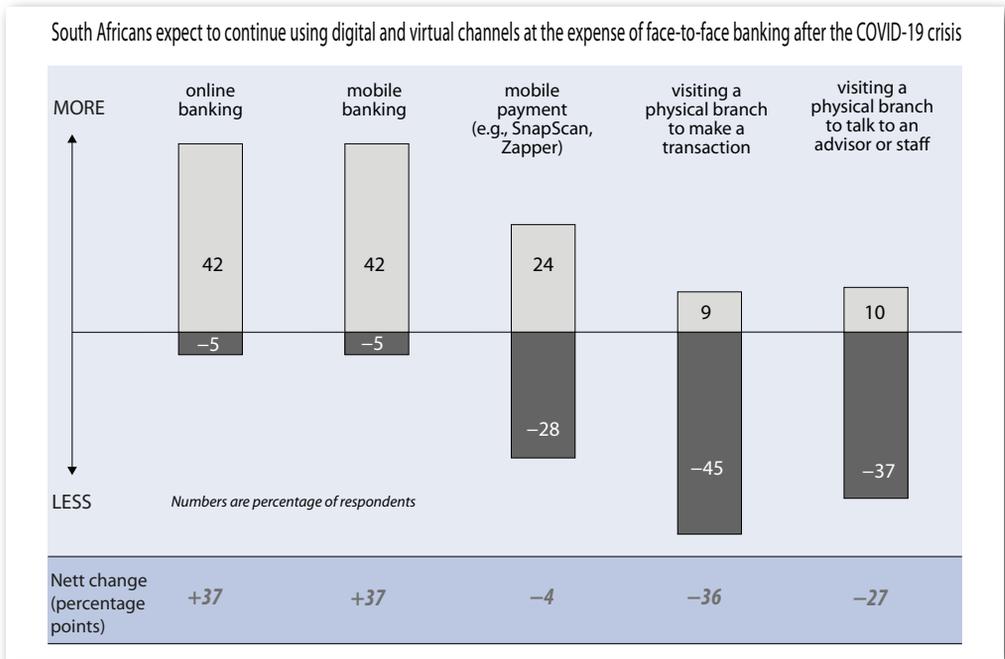
This relatively recent, but bracing set of phenomena finds strong empirical support in a November 2020 study by McKinsey & Co on the online banking habits of South Africans: ‘Forty-five percent of South Africans said they’d visit physical bank branches less often, while 42 percent said they’d increase online and mobile interactions with their banks.’<sup>64</sup> These findings are captured in the chart below.

While I may possess a certain nostalgia for regular interactions with people in commercial settings (most of us are fed by such connections), the truth of the matter is that I can conduct virtually all of my transactions online – via my phone or even more readily on my laptop – without having to leave home, jump in the car and waste both time and energy that could be spent on more fruitful or rewarding endeavours. Of course, from time to time, my overall experience of a bank – or another vendor or service provider – without people to provide assistance may be significantly less gratifying than ‘so-so’. Automated systems – or bots – put in place to answer questions often fail to respond to

<sup>63</sup> *ibid.* at 30.

<sup>64</sup> ‘COVID-19 Has Made South Africans Much More Comfortable with Online Banking’ *McKinsey & Co Financial Insights Pulse Survey* (19 November 2020), accessed at <https://www.mckinsey.com/featured-insights/coronavirus-leading-through-the-crisis/charting-the-path-to-the-next-normal/covid-19-has-made-south-africans-much-more-comfortable-with-online-banking?>

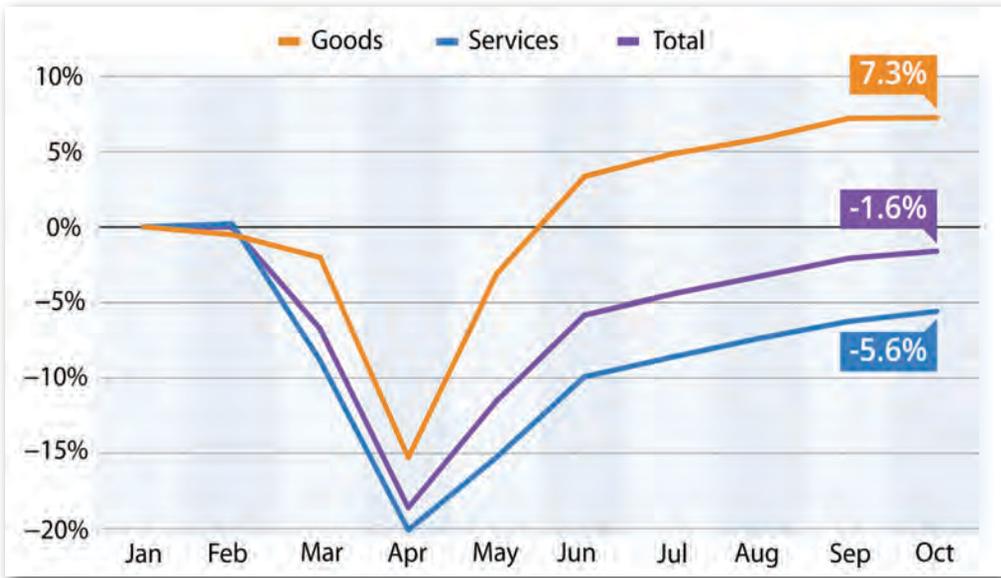
## PERMANENT TECHNOLOGICAL UNEMPLOYMENT



RESPONSES TO THE QUESTION ‘ONCE *NORMAL LIFE* RESUMES AFTER THE CORONAVIRUS CRISIS, DO YOU EXPECT TO USE THESE BANK SERVICES MORE OFTEN, LESS OFTEN OR THE SAME AS YOU WERE USING BEFORE THE CRISIS?’

subtle inquires. It’s not unlike attempting to contact Apple through their iTunes store/app bots. The information supplied is limited – intentionally so. You can get stuck in a ‘yes-no’ or a ‘continue-cancel’ binary when what you seek is some middle ground. Such technological platforms are not even ‘so-so’. They are ‘not so much’. Still, improvements in online transactions at banks, and vendors across the goods and services spectrum, means that I never have to leave home – save for visits to the doctor or intrinsically meaningful endeavours such as meeting a friend or walking the dogs.<sup>65</sup> Same-day or next-day delivery to one’s door changes significantly the calculus of how individuals use their time. For businesses, it eliminates the maintenance of costly floor space and the salaries of shop floor staff (amongst other operational costs). However, notice what happens as a result. These so-so platforms not only make my pandemic life easier; they also enable many big firms and some medium-sized outfits to cut costs and still maintain profitability. Lost employment has been readily identified. Retail floor employees, cashiers and other workers in the food,

<sup>65</sup> Thanks to e-platforms such as Zoom or MS Teams, trips to see a physician or a nurse practitioner for the filling of script or even more complex forms of assessment and treatment can be supplanted by a friendly face looking back at you on your phone or computer. These platforms can deliver more than just efficiency: they can deliver a level kind of care that may not available locally. There’s no substitute for that ‘human touch’, or what one learns in the corporeal company of others. EM Forster’s epigram – ‘Only Connect’ – in *Howard’s End* – or Hillel’s injunction – ‘If I am not for others, then who am I?’ – or the ubuntu maxim – I am because you are – remain the defining features of a meaningful human existence.



THE PANDEMIC'S UNEVEN EFFECT ON CONSUMER SPENDING. CHANGE IN PERSONAL CONSUMPTION EXPENDITURE ON GOODS AND SERVICES IN THE US SINCE JANUARY 2020

bar, restaurant and entertainment industries have been 'permanently' discharged as their employers have shuttered their firms for good as a consequence of the pandemic.<sup>66</sup>

Might we see more of the same automation-generated contraction in South Africa's public-private mall spaces? The economic contractions that occurred prior to the COVID-19 had already led to a diminution in foot traffic – and the shuttering of stores. The mall containing the rump shoebox of an FNB branch experienced such a contraction when many tenants in the mixed commercial space left – taking their daily cohort of employees and foot traffic with them. As a result, anchor restaurants, stores and banks on one side of the mall disappeared entirely or moved into much smaller spaces on the other side of the mall. In a booming economy, FNB might have retained its stylish open space branch. In a contracting economy, FNB eliminated the cost of unnecessary rent (in this mall and malls throughout Johannesburg), and supplanted human bank advisors with e-based banking, online support and call centres. One takeaway, as Acemoglu and Restrepo would agree, is that so-so technology will replace human workers when it can take on their tasks and the cost of investment is relatively low. FNB, and similarly situated banks, might have even gained in productivity from the adoption of these simple AI and partially automated platforms. Is such a scenario 'far-fetched'? As Acemoglu and Restrepo write:

Not really. We have previously studied the implications of one of the most important automation technologies, industrial robots. Industrial robots are not technologies aimed at increasing labour's productivity but are designed to automate tasks that were previously performed by production workers on the factory floor. The evidence is fairly clear that

<sup>66</sup> E Badger & A Parlapiano 'The Rich Cut Their Spending. That Has Hurt All the Workers Who Count on It' *The New York Times* (21 July 2020), accessed at <https://www.nytimes.com/2020/06/17/upshot/coronavirus-spending-rich-poor.html>; F Richter 'The Pandemic's Uneven Effect on Consumer Spending' *Statista* (14 December 2020) <https://www.statista.com/chart/23574/consumer-spending-on-goods-and-services/#>.

industries where more industrial robots are introduced experience declines in labour demand (especially for production workers) and sizable falls in their labour share ... Furthermore, the declines in wages and employment fell much more heavily on workers from the lower half of the earnings distribution and those with less than a college degree, thus exacerbating inequality. All of this is despite the fact that industry-level data also suggest productivity gains from robots.<sup>67</sup>

In my banking example, FNB displaced quite a large number of low-wage, simple-task workers without generating a meaningful reinstatement effect. Not surprisingly, the absence of a reinstatement effect after the adoption of so-so technology generates greater poverty and inequality in two distinct ways:

First, by reducing the labour share, automation increases the relative incomes of capital owners who tend to be richer than those relying on labour income. Second, currently automated tasks typically employ low-skill or medium-skill workers, and declines in their employment and wages tend to contribute to inequality.<sup>68</sup>

As a public policy matter, that so-so automation generally leads to greater productivity without reinstatement effects is cause for concern. As Acemoglu and Restrepo warn:

[I]f all we do is continue down the path of automation, with no counterbalancing innovations to generate new tasks, the implications for employment, wages and inequality could be depressing. It will not be the end of work anytime soon, but the trend towards lower labour share, greater inequality and anaemic growth in labour demand will continue – with potentially disastrous consequences for income inequality and social cohesion.<sup>69</sup>

A significant number of triggers drive the modern adoption of such so-so technology. Some – such as social distancing during the pandemic – have already been addressed in the Prologue. E-commerce and same-day deliveries also limit the need for social interaction; and they have experienced a boom as a result of the pandemic.<sup>70</sup> Such triggers and the extent to which they actually accelerate permanent technological unemployment is addressed again below. For now, it's worth stopping in order to note that:

- AI and automation influence most aspects of everyday life and the modes of production in modern economies; and
- we cannot assume that AI and automation will create better services or free displaced labour to take up better jobs, or worse still, any alternative forms of employment at all.

Without analysing the specific economic sectors within specific polities – as I do later in this chapter as well as in Chapter IV with respect to South Africa – enough data exist for us to be concerned about the kinds of AI and automation in which many businesses invest and from which they actually continue to generate demand and profits. Given the perceived threat of pernicious AI and so-so automation, Acemoglu and Restrepo strongly suggest that policymakers must 'devote care and serious thought to ... [the] implications [of such AI] and to the question of how best to develop this promising technology platform – before it is

<sup>67</sup> D Acemoglu & P Restrepo 'Robots and Jobs: Evidence from US Labor Markets' (2018) 128 *Journal of Political Economy* 2188, accessed at <https://doi.org/10.3386/w23285>.

<sup>68</sup> D Acemoglu & P Restrepo 'The Wrong Kind of AI? Artificial Intelligence and The Future of Labour Demand' (2020) 13 *Cambridge Journal of Regions, Economy and Society* 25, 31.

<sup>69</sup> *ibid.*

<sup>70</sup> A Woodhouse, P Wells, S Provan, H Dempsey, A Samson, N Rovnick & M Badkar 'Coronavirus: Fedex Results Deliver as Pandemic Drives Ecommerce Boom – As It Happened' *Financial Times* (13 September 2020), accessed at <https://www.ft.com/content/86e2dc79-e662-3d6f-8252-4ff5fe979fdd>.

too late.<sup>71</sup> Although Acemoglu and Restrepo's warning carries a Cassandra-like dimension, they are best understood as not only opening up a serious line of inquiry about the upsides and downsides of technological innovation, but also giving us a means to assess whether a novel form of technology is a boon or a bane to a particular society. As a result, other scholars have begun to undertake inquiries and assessments of technological innovation which round out our understanding of the extent of the threat they pose to employment in various countries and markets around the world. Many of those assessments are assayed below. But before doing so, it's worth considering how the phenomenon of technological unemployment has made itself manifest over the last two-and-a-half centuries.

### E. A Brief History of Technological Unemployment

Prior to 1750, the world's per capita income doubled once every 6 000 years. Simply put, despite some global or regional trade, wealth did not increase substantially, and per capita income remained largely the same. Even the greatest empires stayed largely agrarian – with occasional novel innovations. But such innovations – whilst they may have served rulers, citizens and other inhabitants – neither increased growth nor led to healthier, enhanced or longer lifespans.<sup>72</sup>

After 1750, per capita income doubled every 50 years through the year 2000.<sup>73</sup> Bolt, Jong and Zandem's work depicts a hockey stick of growth: *flat* from 0 CE until 1000 CE, a *negligible gain* over the next 500 years, a *discernible increase* over the next 250 years and *exponential growth* between 1800 to 2000.<sup>74</sup>

Despite such accelerated growth, a curious statistic appears in these early years of industrialisation. Living standards for a large number of people – in the few countries that were industrialised – actually *regressed*.<sup>75</sup> The curious statistic, as we shall see, is not so curious or anomalous at all. It repeats itself again from 1800 to 1850.<sup>76</sup> Thereafter, divergences in growth and living standards between inhabitants of various countries have generally been a function of *differential rates of technological adoption*.<sup>77</sup> In many countries, the acceleration of technological innovation (along with shifts in trade policy) since 1980 has led to another downturn in wellbeing in various parts of the world, and growing disparities of wealth and income within both developed and developing countries alike.

Let's begin with these first two periods, 1750–1800 and 1800–1850.

Why, for example, did major industrialised cities in England have a life expectancy that was 10 years less than the national average as late as 1840?

<sup>71</sup> *ibid.* at 35.

<sup>72</sup> Indeed, evidence exists that hunter-gatherers lived longer, healthier lives. This counter-intuitive proposition flows from clear indications that hunter-gatherers had a more varied diet than agrarian communities that had settled down into the more stable food-production methods of farming and herding.

<sup>73</sup> B De Long 'Estimating World GDP: One Million-BC – Present' *Working Paper, University of California Berkeley* (1998/2006), accessed at [https://econ161.berkeley.edu/20061012\\_LRWGDP.pdf](https://econ161.berkeley.edu/20061012_LRWGDP.pdf).

<sup>74</sup> J Bolt, R Inklaar, H de Jong & J Van Zanden 'World Gross Domestic Product Per Capita, 1 – 2008' *Rebasing 'Maddison': New Income Comparisons and the Shape of Long Run Economic Development* (2018).

<sup>75</sup> C Frey *The Technology Trap: Capital, Labor and Power in the Age of Automation* (2019) 7.

<sup>76</sup> A Deaton *The Great Escape: Health, Wealth and the Origins of Inequality* (2013).

<sup>77</sup> D Comin & M Mestieri 'If Technology Has Arrived Everywhere, Why Has Income Diverged?' (2018) 10 *American Economic Journal: Macroeconomics* 137.

At the beginning of the industrial revolution, highly skilled artisans constituted the first group to lose their livelihoods to mechanisation. The first factories employed *adult males* to work many new machines. For example, spinning machines used to turn cotton into cloth initially eliminated artisanal weavers. But further technological innovation with respect to spinning machines meant that they could be made smaller and require less brute force. As a consequence, adult male laborers in spinning factories could be replaced *by women and ultimately children*. Always a vulnerable class, children could be employed at a fraction of the cost of adult male laborers. In sum, during this first stage of early technological unemployment, the displacement of ‘domestic’ industries scattered throughout the country, and then centralised within cities, eliminated one class of reasonably skilled and well-off craftspersons. During the second stage of this specific form of technological unemployment, adult males were replaced by women and children.

The displacement of skilled artisans led to the first diminution in standards of living. The displacement of adult male wage earners by cheap child labour, in overcrowded, poorly resourced metropolises, led to a further reduction in the standard of living of the average labourer and their families in urban England. The wealth and the wellbeing generated *during this period* flowed almost entirely to those persons with sufficient income to invest in novel technologies and to scale them up to factory capacity. Thus, as David Landis writes:

If mechanization opened up new vistas of comfort and prosperity for all [persons], it also destroyed the livelihoods of some and left others to vegetate in the backwaters of the stream of progress ... The victims of the Industrial Revolution numbered in hundreds of thousands or even millions.<sup>78</sup>

Virtually every reader will be familiar with the term ‘Luddite’ – usually employed as a pejorative shorthand for someone opposed to technological change. A smaller number of readers will know that it refers to a specific rebellion by displaced workers between 1811 to 1816. Fewer still will know that this conflict signalled the *first* firm switch of sides by the English government in the worker vs machine wars. Not even this author knew – until undertaking this project – that the size of the English army deployed to crush this worker rebellion was twice the size of the army that had defeated Napoleon only a decade earlier.

Two points are worth noting before this narrative proceeds. First, the rate of innovation and the extent of technological unemployment (and concomitant urban blight) turned predominantly on the willingness of the state to support the interests of titans of industry and the new class of economically engaged bourgeoisie. Second, although the benefits of technological innovation did not immediately flow to displaced artisans or wage earners, they certainly did so (for the vast majority of people) over time. While virtually all of the one billion inhabitants of the world in 1800 still lived the limited, impoverished agrarian existence of 40 short, brutish and nasty years, some 220 years later, over half of the 7.8 billion humans on the planet are now middle class or rich. Average life expectancy has increased to 71 years writ large and 82 years in more developed economies and nation-states. (Women in developed countries live well into their mid to late eighties.) Literacy rates worldwide have increased to 87% in 2020, whereas they stood at roughly the obverse,

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<sup>78</sup> D Landis *The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present* (1969) 7.

12%, in 1820.<sup>79</sup> Whether most nations, including South Africa, can adopt strategies that mitigate the untoward effects of accelerating permanent technological unemployment and enhance the wellbeing of the least well-off is addressed in the conclusion and the epilogue of this work.

The lessons of history for understanding the present must, as Hannah Arendt noted, be approached with caution. Yet they remain instructive, nevertheless. Billionaire-cum-philanthropist Bill Gates seemed somewhat flummoxed several years ago when he stated: ‘Innovation is faster than ever before ... yet Americans are more *pessimistic* about the future.’<sup>80</sup> He seemed equally flummoxed by Senator Elizabeth Warren’s contention that the vast majority of Americans would be better served by government programmes paid for by a minimal wealth tax than they would by the charitable endeavours of a few foundations (and none larger than the Bill and Melinda Gates Foundation.<sup>81</sup>)

Throughout most of Europe and China such *pessimism* – and the political policies that reflected fear of destabilising revolts that flowed from such pessimism – remained in place for the better part of the 19th century. This historical account runs counter to assumptions that capitalism has had the world by the throat since the 17th century. This confusion stems from four sources:

- the failure to identify the periods in which the state sided with labour over innovators and capital;
- the failure to identify the period when capital accumulation increased substantially;
- the failure to identify the periods in which technological innovation was either labour enabling or, more importantly for this account, displacing without reinstating; and
- the failure to distinguish trade from industrialisation.<sup>82</sup>

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<sup>79</sup> J van Zanden et al. ‘How Was Life?: Global Well-being since 1820’ *Organization of Economic Cooperation and Development* (2014), accessed at <https://doi.org/10.1787/9789264214262-en>.

<sup>80</sup> E Brynjolfsson *Race Against the Machine* (Lecture, Massachusetts Institute of Technology, 2012), accessed at <http://ilp.mit.edu/images/conferences/2012/IT/Brynjolfsson.pdf>.

<sup>81</sup> The 2020 Gates – whose constant warnings about the possibility of a global pandemic went unheeded – now appear to understand the structural and institutional inequalities that make health outcomes far worse for the most marginalized citizens in all nations, but especially so in the world’s poorest nations. ‘The Covid-19 Pandemic Will Be Over by the End of 2021, says Bill Gates – But Millions of Deaths are yet to Come in Poor Countries’ *The Economist* (18 August 2020), accessed at <https://www.economist.com/international/2020/08/18/the-covid-19-pandemic-will-be-over-by-the-end-of-2021-says-bill-gates>.

<sup>82</sup> Acemoglu and Robinson (2012) offer a similar account:

On the eve of the Industrial Revolution in the eighteenth century, the governments of most European countries were controlled by aristocracies and traditional elites, whose major source of income was from landholdings or from trading privileges they enjoyed thanks to monopolies granted and entry barriers imposed by monarchs. Consistent with the idea of creative destruction, the spread of industries, factories, and towns took resources away from the land, reduced land rents, and increased the wages that landowners had to pay their workers. These elites also saw the emergence of new businessmen and merchants eroding their trading privileges. All in all, they were the clear economic losers from industrialization. Urbanization and the emergence of a socially conscious middle and working class also challenged the political monopoly of landed aristocracies. So with the spread of the Industrial Revolution the aristocracies weren’t just the economic losers; they also risked becoming political losers, losing their hold on political power. With their economic and political power under threat, these elites often formed a formidable opposition against industrialization.

D Acemoglu & J Robinson *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (2012) 85.

*State, labour, innovation and capital*

In popular lore, no matter who is keeping score, England's place as the avatar of the technological revolution flows from its unique position as home to the scientific revolution, an empire upon which the sun never set and the industrial revolution. It was that unique place where the scientific method, state power and economic power could turn raw products found round the world (and largely extracted from British colonies) into finished products by dint of new machines.

The explanation, which should ring familiar to South African ears, is that England was one of the first countries to switch sides in what would be a drawn-out and not yet complete battle between industrialists and workers. (That war is still being waged, even if it may seem otherwise.) Political power prizes stability. Until the beginning of the 19th century, political stability (necessary for the maintenance of privilege) meant that ruling elites would rather keep the majority of its agriculturalists and artisans placated than risk the rebellion that would flow from their displacement.

Other than England, and perhaps the Netherlands, 19th century political powers chose the status quo. As late as 1845, Bayezid II, Sultan of the Ottoman Empire, refused to allow lithography and printing presses out of fear that a well-read population could mobilise in a manner that would undermine his vast and wealthy empire. The Austro-Hungarian Empire, led by Francis I, blocked the very factories that would displace manual labour and create dense populations in cities such as Vienna. Indeed, he expressly stated the rationale behind his edicts: 'No, no, I will have nothing to do with it, lest the revolution might come into the country.'<sup>83</sup> Russia's Czar Nicholas – upon witnessing worker unrest in Europe – passed a law in 1848 that expressly banned new ironworks and textile factories.<sup>84</sup>

Across the globe, China held out even longer. Its powerful guilds prevented labour-augmenting and capital-saving devices until the beginning of the 20th century.<sup>85</sup> Not surprisingly, the opening of ports to foreign trade in the latter half of the 19th century made the backwardness of China's various industries readily apparent.

And then there's England's mirror, France. The proximity to England made the advantages of technological innovation quite obvious from the start. It did not lack for an emergent class of entrepreneurs and industrialists in the 18th century. However, absent was a state with either the willingness or the actual power to suppress riots and rebellions. Rather than court the social upheaval that flowed from mechanisation, the royalty suppressed industrialisation.<sup>86</sup> Ironically, the riots and rebellions against industrialisation became, in the public imagination, bound up with the riots and rebellions of the French Revolution.<sup>87</sup> As a result, technological innovators could not rely upon support by the state.<sup>88</sup> (Each set of revolutionary actors emphasised a specific cluster of the standard array of civil and political rights: their agendas were different but not antithetical.)

Despite this global narrative of resistance to technological innovation, a myth persists that the industrial revolution is at least a century older than it is. Perhaps a book on the

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<sup>83</sup> *ibid.* at 219.

<sup>84</sup> *ibid.* at 221.

<sup>85</sup> H Morse *The Guilds of China* (1909) 1.

<sup>86</sup> J Horn *The Path Not Taken: French Industrialization in the Age of Revolution, 1750–1839* (2008) Chapter 4.

<sup>87</sup> *ibid.*

<sup>88</sup> *ibid.*

virtues of *trade* (as opposed to industrialisation) – *The Wealth of Nations* – explains this misunderstanding. Likewise, the most incisive reflections upon the depredations of early *industrialisation*, say by Marx and Engels, explains our misunderstanding of history. Or it may be that the attention paid to the once most powerful nation on the planet – home to the first 100 years of this politico-economic experiment – explains our reading of English history as an explanation of all human history.

But once the narrative is clarified, it does not lack for explanatory power. Technological innovation, automation and any concomitant permanent technological unemployment should be understood to be a function of where ultimate control of the state's law-making power can be agreed to rest. To the extent that labour was able to thwart entrepreneurs and industrialists (or enter into cooperative agreements, e.g., Germany), technological unemployment has at least been momentarily and somewhat stymied. However, where the balance of power has swung toward capital, it has been because political elites have seen the advantage in siding with unemployment-creating innovative technologies and their wealthy owners. As the brief historical analysis above suggests, this control over the levers of power has swung back and forth.

For the most part, most nations between 1750 and 1850 rejected productivity-increasing, labour-enhancing and labour-saving forms of technological innovation.<sup>89</sup> The majority did so because elites feared rebellion and the loss of power. However, once various heads of state recognised the benefits of novel technologically driven industrialisation for their own coffers, they made a switch in laws from those edicts which had once protected guilds, and unschooled labour, to new laws that protected industrialisation driven by technological innovation. To put it bluntly, the jackboot of the state (sufficiently well-funded from taxes and emoluments from industry) could be used to suppress regular revolts by labour that occurred each time large numbers of workers were supplanted by automation.<sup>90</sup>

The story shifted around the *fin de siècle*. Robber-barons had accumulated so much capital, and controlled so many industries with monopoly power, that they posed an existential threat to low-wage labourers, smaller competitors and the state itself. In response, antitrust or competition laws were created to cap the degree of power any corporation could wield within an industry, and across industries, as well as the degree of power that it might exercise within the polity writ large. While that description oversimplifies matters, Rockefeller and Roosevelt fortunes were, in fact, translated into Rockefeller and Roosevelt political power. Only the state – with an active citizenry and their enlightened representatives – had the ability to limit the accumulation of capital in individual hands.

The next limitation on the growth of technologically driven and labour-saving industry has already been discussed. A great levelling took place between (and because of) the two World Wars – with a great global depression and a deadly pandemic sandwiched in between.<sup>91</sup> Not only did these events literally level the playing field, the penury into which the masses of citizens fell moved a number of western liberal democracies to create a social welfare state designed to ensure that average working-class citizens possessed a net that would catch them if and when things fell apart – or their lives were disrupted

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<sup>89</sup> C Frey *The Technology Trap: Capital, Labor and Power in the Age of Automation* (2019) 85–92.

<sup>90</sup> *ibid.* at 97–111.

<sup>91</sup> W Scheidel *The Great Leveler: Violence and the History of Inequality from the Stone Age to the 21st Century* (2017).

by unemployment or illness or homelessness. Moreover, not only did more individuals graduate from high school; greater numbers began to graduate from universities. The state – for a time – backed unions and enabled working-class labourers to live a middle-class existence. The state then created opportunities for graduate school education to larger portions of the population. It thereby fashioned a broader, larger, more sophisticated, professional middle class. Whilst the years may be subject to debate, from the early 1930s to mid-1980s, the liberal/social welfare democracies appeared to swing the law and its power back toward labour.

Thereafter, however, accumulated capital found multiple forms of support within liberal democratic states. Businesses of all forms grew in size. Unions, the bulwark of the working class and middle class – and viewed quite often as the road to generational improvement – found their power contested and often broken. At the same time, business, unconstrained by domestic arrangements, sought domiciles with less expensive labour to make their products or portions of their products. The mix of neutered unions and free-trade policies buried the working class.

As the trend toward concentrated capital amongst the top 10% and 1% continued, technological innovations also gained steam. Whilst PCs and various forms of software might have been initially seen by the middle and professional class as labour-augmenting technological innovations, the 21st century ushered in technological innovations that began to supplant and to displace the work historically undertaken by middle and upper-middle classes.<sup>92</sup> In addition, the accumulation of capital amongst the wealthy reinforced privilege in higher education and further hollowed out the middle class. The balance of power had tipped quite lopsidely back towards capital.<sup>93</sup> Indeed, it's difficult for me to imagine that my path from a working-class family to a middle-class professional family could be replicated today. Over the last few decades, many states have firmly backed monied interests and ushered in a second gilded age.<sup>94</sup>

South Africans may claim some degree of exceptionalism, though it does not take an especially positive form. Labour's shining moment came in the 1980s when it played a pivotal role in making the country ungovernable and thereby brought the racist, authoritarian, white minority, apartheid government to its knees. However, it's difficult to maintain that organised labour – as part of the governing tripartite alliance – has acted in a manner that has benefitted more than the narrow band of its working-class/public sector membership or its leadership.

The timing of South Africa's initial rise to prominence in the late 19th century coincides with that of technological innovation, capital accumulation and the decision of one nation in particular – England – to side with the monied classes over labour. Prior to 1870, the geographical space now known as South Africa consisted of three African kingdoms, two English colonies and two Afrikaner republics. A mess to be sure, but not quite yet on the international radar. The discovery of diamonds on the banks of the Orange River in 1866 changed this delicate balance of power. Up until 1866, the British government had shown

<sup>92</sup> A Grawal, J Gains & A Goldfarb *Prediction Machine: The Simple Economics of Artificial Intelligence* (2018); D West *The Future of Work: Robots, AI and Automation* (2018); M Ford *Architects of Intelligence: The Truth about AI from the People Building It* (2018).

<sup>93</sup> E Blanchard & G Willmann 'Trade, Education, and the Shrinking Middle Class' (2016) 99 *Journal of International Economics* 263.

<sup>94</sup> J Lanier *Who Owns the Future?* (2019).

virtually no interest in formal colonization of the entire area until its vast mineral wealth became obvious to all. As Nicolas Van De Walle writes:

[E]gged on by its own jingoism as well as by the local pro-British business class, at the head of which sat [Cecil] Rhodes ... the British government manufactured a series of political crises' designed to seize control of most of Southern Africa.<sup>95</sup>

Left out of this brief account, of course, is the racist, dehumanizing, deadly brutality of Cecil Rhodes, the British Empire and their killing fields. The depredations, dispossessions, destruction and deaths of millions of Southern Africa's original inhabitants looks, in the rearview mirror, much like King Leopold's final solution in extracting as much mineral wealth and rubber from his personal fief of the Congo: 10 million dead – genocide in deed, if not name.<sup>96</sup>

For England, to hear Russel Alley tell the story, control of gold meant a significant degree of control over the gold standard that had just begun to form the basis for an international monetary system. England brought all its power to bear on South Africa. Multiple wars fought over 30 years ensured control of the gold reserves. The power exercised naturally went beyond momentary military might. The colonial regime instituted racist labour laws and engaged in multiple forms of disenfranchisement, dispossession, dehumanisation, degradation and dispatchment of black South Africans. (Sufficient surplus labour through such social control and servitude invited millions of capricious deaths as well.<sup>97</sup>) Firmly on the side of industry and entrepreneurs who would secure ongoing access to gold, the empire's laws allowed for multiple technological innovations – including the installation of Johannesburg's first lighting plant in 1889 and its first power station in 1891. For the next 100 years, the law would create an almost inexhaustible supply of easily replaceable subsistence labour. The vast majority of South Africans were reduced to 'things' that made the mines and other industries work for a privileged few.

The plenitude of such concentration camp labour had a dual effect. On the one hand, it enabled to South Africa to develop new technologies to reach down into the deepest recesses of its mines. On the other hand, the inexhaustible supply of blood labour meant that new technologies designed to extract precious minerals at a cost below the price of labour were not particularly necessary – that is, free labour made labour-replacing technology less of a necessity.

But if the weight of the state has anything to do with such a brutal contretemps between labour and capital, then a noteworthy shift has occurred here over the last 40 years. Prior

<sup>95</sup> N Van De Valle 'Diamonds, Gold, and War: The British, the Boers, and the Making of South Africa' *Foreign Affairs* (March/April 2008), accessed at <https://www.foreignaffairs.com/reviews/capsule-review/2008-03-02/diamonds-gold-and-war-british-boers-and-making-south-africa>; M Meredith *Diamonds, Gold, and War: The British, the Boers, and the Making of South Africa* (2007).

<sup>96</sup> B Magubane *The Making of a Racist State: British Imperialism and the Union of South Africa, 1875-1910* (1996); S Lindqvist *Exterminate All the Brutes: One Man's Odyssey into the Heart of Darkness and the Origins of European Genocide* (2008); L Weiss 'Exceptional Space: Concentration Camps and Labor Compounds in Late Nineteenth-Century South Africa' in A Myers & G Moshenska (eds) *Archaeologies of Internment* (2011); B Madley 'From Africa to Auschwitz: How German South West Africa Incubated Ideas and Methods Adopted and Developed by the Nazis in Eastern Europe' (2005) 35 *European History Quarterly* 429.

<sup>97</sup> A Zegeye 'Rehearsals of Genocide in South Africa: Thinking with and beyond Francis Nyamnjoh and Michael Neocosmos' (2012) 10 *African Studies* 329, accessed at <https://doi.org/10.1080/14725843.2012.715459>.

to the Soweto uprising of 1976, the weight of a racist, fascist, authoritarian state placed business in a position of indomitable strength. Rebellions and riots that challenged the master-slave relationship were suppressed by the jackboot of the apartheid state. However, matters began to shift in the post-1976 era, as unionised labour continually challenged the manner in which ‘business’ was done. As noted above, the unions played a game-changing role in making South Africa ‘ungovernable’. South African business – under pressure from within and from without – could no longer engage in business as usual; neither could it any longer rely upon the apartheid state. Business signalled to its political partners that the status quo could not continue. So instructed, the state ensured the law’s shift after the last general election under apartheid on 6 September 1989. Thereafter, the declaration of 2 February 1990 held that political movements such as the ANC and PAC were to be unbanned and political prisoners were to be released. Finally, the general referendum held on 17 March 1992 brought about the (formal) end of apartheid.

If the balance of power had shifted, that’s hardly to say that it now favoured labour over industry. The settlement that they reached – as manifest in both the 1994 and 1996 Constitutions – reflected something of a stalemate. Business maintained a position of economic privilege. Organised labour maintained its position vis-à-vis business and further enhanced its position by becoming part of the tripartite ruling alliance with the ANC and the SACP. Neither moved the needle very much, nor did the state itself, now under majority rule, dramatically change the balance of power. (The demise of the Reconstruction and Development Programme (RDP) after a mere two years (1994–1996) in exchange for the Growth, Employment And Redistribution (GEAR) policy, a macroeconomic strategy predicated upon the attraction of foreign direct investment, reflected the ANC’s lack of commitment to significant, if not, radical redistribution and redress.<sup>98</sup>) Neither the state, nor labour, nor business, nor the most privileged members of society did anything of note to fix the deep structural flaws in South Africa’s economy. The poor and uneducated majority remained so. The overall unemployment rate in 2019, closer to 40% than the official estimates of 30%, and an unemployment rate of roughly 60% for those between the ages of 15–24 through 2019, offers as good an indication of any as to how little changed in the first 26 years of democratic majority rule.<sup>99</sup>

Yet technological disruption and displacement of the kind described above has occurred. After the Marikana Massacre of 2012 – in which 38 miners and protestors died – a not so subtle shift occurred within the mining industry. At the same time as union wages rose, mining companies increased significantly the degree of mechanisation and automation employed in their shafts. Under the guise of shedding no more innocent life, the industry has made itself both cleaner and leaner.

The platinum industry, as of 2012, employed roughly 197 000 persons.<sup>100</sup> Six years later, that number dropped to 167 000. While wages for semi-skilled workers have increased, their numbers have dwindled. To avoid bloodshed, the industry has increased

<sup>98</sup> GEAR reflected a misplaced belief that foreign direct investment would work the same miracles here as it had in Asia. As has already been noted, the investment capital flowed out, not in.

<sup>99</sup> ‘South African Youth Unemployment Rate’ *Trading Economics* (15 January 2020), accessed at [www.tradingeconomics.com](http://www.tradingeconomics.com). The percentage of unemployed youth stood at 58.10% at the end of Q4 in 2019.

<sup>100</sup> E Stoddard ‘For the Platinum Industry, Marikana was a “Mechanisation Moment”’ *Business Maverick* (16 August 2019), accessed at <https://www.dailymaverick.co.za/article/2019-08-16-for-the-platinum-industry-marikana-was-a-mechanisation-moment/>.

its use of labour-saving technological innovations. For example, in July 2012, Amplats reported R713-million in first half earnings. In 2019, with fewer employees, and no deaths on the reef, its first-half earnings had jumped 10-fold to R7.3 billion. The increase in productivity – ounces unearthed and refined – and the decrease in labour – less than half the staff – produces profits that can almost wholly be attributed to innovation and technological automation. As Ed Stoddard has recently noted:

Impala Platinum says its ‘focus in the short to medium term is to continue its strategic journey to transform into a PGM producer *mining mechanised, low-cost ore bodies*’ while Northam Platinum’s new operations are shallow and mechanised. It is also experimenting with state-of-the-art tunnelling technology. Sibanye, a Gold Fields’ spin-off that has since branched out into PGMs, has scored big with its purchase of the mechanised palladium-rich Stillwater operation in the US state of Montana. It now accounts for about 80% of the company’s value, while employing a fraction of its workforce ... A digital revolution is now also underway in the mines. This includes innovations such as ‘digital twinning’, whereby a ‘digital twin’ mirrors, say, a mechanical drill. If the machine falls behind the ‘twin’, which in its virtual world operates at optimum capacity, that is a signal that something is wrong that requires immediate attention. [Digitalisation] has huge implications for productivity and an operation’s skills base. It is surely just a matter of time before such trends begin displacing labour in ways we have not yet conceived.<sup>101</sup>

Technological innovation and the concomitant technological unemployment have enabled mining companies to meet significantly increased wage demands for a smaller workforce and avoid volatile and violent strikes.

### *Technological innovation and permanent labour displacement – aka permanent technological unemployment*

When I was coming of age as a young man in the 1980s, *The New York Times* ran a series that demonstrated how very few individuals in the United States moved out of the class into which they were born. As I’ve noted, for a time, I was an outlier.

But even for well-educated outliers such as myself, the clock was ticking.

The period between the early 1930s and the early 1980s suggested an answer to workers who were being displaced by cheap labour and automation: go back to school. But as Picketty’s work suggests, even this answer had problems. It couldn’t explain why the top 1% and 10% were generating greater gains in wealth and income than those who were similarly educated. Recall, then, Acemoglu and Restrepo’s conclusions:

[I]f the origin of productivity growth in the future continues to be automation, the relative standing of labor, together with the task content of production, will decline ... We have pointed out some reasons why the balance between automation and new tasks may have become inefficiently tilted in favor of the former – with potentially adverse implications for jobs and productivity – and some directions for policy interventions to redress this imbalance.<sup>102</sup>

Six years before Acemoglu and Restrepo reached their conclusions, Paul Krugman had reached his own more expansive account:

<sup>101</sup> *ibid.* (Emphasis added)

<sup>102</sup> D Acemoglu & P Restrepo ‘Automation and New Tasks: How Technology Displaces and Reinstates Labor’ (2019) 33 *Journal of Economic Perspectives* 4, 27.

Today, however, a much darker picture of the effects of technology on labor is emerging. In this picture, highly educated workers are as likely as less educated workers to find themselves displaced and devalued, and pushing for more education may create as many problems as it solves ... So should workers simply be prepared to acquire new skills? The woolworkers of 18th-century Leeds [the Luddites] addressed this issue back in 1786: ‘Who will maintain our families, whilst we undertake the arduous task’ of learning a new trade? Also, they asked, what will happen if the new trade, in turn, gets devalued by further technological advance? ... And the modern counterparts of those woolworkers might well ask further, what will happen to us if, like so many students, we go deep into debt to acquire the skills we’re told we need, only to learn that the economy no longer wants those skills? Education, then, is no longer the answer to rising inequality, if it ever was (which I doubt).<sup>103</sup>

Six years later, Campa confirmed Krugman’s fears: ‘Jobs that do not disappear completely are those involving a physical effort that cannot be defined by a tractable list of rules and, therefore, cannot be easily implemented in a machine, or those that are so humble and low paid, that, even when their automation is technically possible, it is still more economical to hire humans.’<sup>104</sup> That analysis suggests that even the best education – save in a few disciplines tied to technological innovation – is not a bulwark against accelerating automation or the accumulation of capital by a small elite.

Here is Krugman’s own answer to his prescient assessment in 2013:

If the picture I’ve drawn is at all right, the only way we could have anything resembling a middle-class society – a society in which ordinary citizens have a reasonable assurance of maintaining a decent life as long as they work hard and play by the rules – would be by having a strong social safety net, one that guarantees not just health care but a minimum income, too. And with an ever-rising share of income going to capital rather than labor, that safety net would have to be paid for to an important extent via taxes on profits [and extant bodies of inherited wealth].<sup>105</sup>

By 2020, Krugman had gone from being the ‘conscience’ of a nation,<sup>106</sup> to its tragic COVID-19 Tiresias:

One thing I keep hearing, however, is that we must reopen for the sake of workers, who need to start earning wages again to put food on their families’ tables. So it’s important to realize that this is a really bad argument. For America is fully capable of shielding workers idled by the lockdown from severe economic hardship. As Jerome Powell, the chairman of the Federal Reserve, said we can and should pursue policies that ‘keep workers in their homes, keep them paying their bills. Keep families solvent’ ... But the expanded unemployment benefits that are doing so much good are set to expire on July 31. That should scare you ... Suppose ... that the epidemiologists are right, and that premature reopening leads to a second wave of infections. What we’ll need in that case is a second lockdown. But all indications are that Republicans are totally opposed to extending benefits ... What they want, instead, is legislation that would protect businesses from liability if their employees get sick. That is, they want to force Americans to go to work even if it kills them.<sup>107</sup>

<sup>103</sup> P Krugman ‘Sympathy for the Luddites’ *The New York Times* (14 June 2013), accessed at <https://www.nytimes.com/2013/06/14/opinion/krugman-sympathy-for-the-luddites.html>.

<sup>104</sup> R Campa *Still Think Robots Can’t Do Your Job? Essays on Automation and Technological Unemployment* (2018) 41. See also L Gallino *Capitalism and Democracy* (2007).

<sup>105</sup> *ibid.*

<sup>106</sup> P Krugman *The Conscience of a Liberal* (2007).

<sup>107</sup> P Krugman ‘We Should Help Workers, Not Kill Them’ *The New York Times* (18 May 2020), accessed at <https://www.nytimes.com/2020/05/18/opinion/coronavirus-unemployment.html>.

Notice that within a mere seven years, Krugman has gone from pleading with Oedipus to save the middle class through a revised estate tax to begging for unemployment benefits that will not force 50 million people living on the margin into making a choice between penury and putting their lives at risk by returning to work. However, even with some bipartisan support, the creation of jobs in an economy that has shifted substantially to e-commerce will be no simple task. Thus what should concern Krugman far more is the 42% of currently unemployed workers who could see their jobs vanish as the economy recovers. As Barrero, Bloom and Davis's May 2020 model suggests, a combination of lockdowns and social distancing policies will result in a substantial shift of employment from standard brick and mortar retail and service positions to jobs at already dominant e-commerce firms that require far fewer employees to deliver the same goods and services:

Even if medical advances or natural forces bring an early resolution to the crisis, many pandemic-induced shifts in consumer demand and business practices will persist. Thus, much of the near-term reallocative impact of the pandemic will also persist, as indicated by our forward-looking reallocation measures. Drawing on our survey evidence and historical evidence of how layoffs relate to recalls, we estimate that 42 percent of recent pandemic-induced layoffs will result in permanent job loss. If the pandemic and partial economic shutdown linger for many months, or if pandemics with serious health consequences and high mortality rates become a recurring phenomenon, there will be profound, long-term consequences for the reallocation of jobs, workers and capital across firms and locations.<sup>108</sup>

That's truly *accelerated* permanent technological unemployment for you.<sup>109</sup>

## F. On the Acceleration of Automation

Let's attempt to give a bit more heft to the meaning of 'acceleration' when it comes to permanent technological unemployment. Less than four years ago, Walmart was one of the top 10 firms in the world in terms of revenue.<sup>110</sup> It had a market capitalisation of \$260 billion.<sup>111</sup> In August 2020, it had a market cap of \$370 billion<sup>112</sup> – a mere one-sixth of that of Amazon.

<sup>108</sup> J Barrero, N Bloom & S Davis 'COVID-19 is also a Reallocation Shock' *Working Paper No. 2020-59, Becker Friedman Institute, University of Chicago School of Business* (May 2020) 5.

<sup>109</sup> While Barrero, N Bloom & S Davis don't use the term 'permanent technological unemployment', implicit in their analysis is that firms that can deliver services and goods through distribution networks that possess little to no risk of COVID-19 infection will supplant firms that delivered many of the same (or similar) services and goods in a manner that required personally mediated and unprotected contact. For example, when tech behemoth Amazon hires 80 000 new workers to pack and drop off food and other items at your doorstep at the same time as 100 000 restaurants go out of business permanently (within roughly the same month), you've got a pretty clear idea of how the shape of recent (COVID-19 related) events has accelerated the significant contraction of employment in the food industry, and altered, through covert surveillance, the conditions of employment within that industry. S Herrera 'Amazon Has Hired 80,000 Workers Amid Soaring Demand During Coronavirus Outbreak' *The Wall Street Journal* (2 April 2020), accessed at <https://www.wsj.com/articles/amazon-has-hired-80-000-workers-out-of-100-000-plan-announced-weeks-ago-11585840027>; H Peterson 'Amazon-Owned Whole Foods is Quietly Tracking its Employees with a Heat Map Tool that Ranks which Stores are Most at Risk of Unionizing' *Business Insider* (20 April 2020), accessed at <https://www.businessinsider.com/whole-foods-tracks-unionization-risk-with-heat-map-2020-1?IR=T>.

<sup>110</sup> L Chen 'The World's Largest Companies 2014' *Forbes* (7 May 2014), accessed at <https://www.forbes.com/sites/liyanchen/2014/05/07/the-worlds-largest-companies-china-takes-over-the-top-three-spots/#5ae996bf6f61>.

<sup>111</sup> 'Walmart Market Capitalization, 2006–2019' *Macrotrends* (2019), accessed at <https://www.macrotrends.com>.

<sup>112</sup> 'Market Cap for Walmart Inc.' *Finbox* (27 August 2020), accessed at <https://finbox.com/NYSE:WMT/>

In markets increasingly dominated by *non-brick and mortar* companies such as Amazon, Google, Microsoft and Apple,<sup>113</sup> this rapacious destroyer of smaller brick and mortar stores and larger malls,<sup>114</sup> this insatiable employer that refused to pay a living wage,<sup>115</sup> was under real threat of failure as it attempted to pivot and compete with virtual firms.<sup>116</sup> Its own brick and mortar stores are expensive (with all that floorspace and all those employees).<sup>117</sup>

But Walmart wasn't entirely finished. It has used its vast distribution networks (and its stores as warehouses) to compete with Amazon's one-day and even same-day delivery operations. While Walmart still employs extant distribution networks and supply chains, the company – like other retailers – has decided to replace as many human beings as possible with robots:<sup>118</sup>

The lights are going out at malls across the United States with more than 20 major retail bankruptcies in 2017. As of today, store closures have skyrocketed to 7,000 doors throughout the nation, affecting such iconic brands as Toys “R” Us, Walgreens, Gap, Sam's Club, The Children's Place, Hallmark, Stride Ride, Aeropostale, Wet Seal, The Limited and Walmart ... At the same time, investment in retail technology has never been higher, especially robots. A month after Walmart laid off close to 10,000 workers with the shuttering of Sam's Club, it announced a new partnership with Pittsburgh-based robot manufacturer, Bossa Nova. The mechatronics innovator will begin rolling out inventory auditing scanning bots to 50 Walmart locations. The machines will automate the tasks previously held by inventory associates by autonomously navigating around the store to check the shelf display, inventory position, and pricing of the big box's 200,000 items. As Martin Hitch, founder of Bossa Nova describes, 'We look at the depth of the shelves, so we're able to see whether a product is fully stocked, completely out of stock, or some level of depletion in between.' Hitch's robot then sends an alert to a store associate to physically restock the shelves or fix the item in question.<sup>119</sup>

Thanks to the COVID-19 pandemic, Walmart's US e-commerce sales have increased 44.2% to \$41.01 billion in 2020 – a significant bump from its exceptional 36.8% growth in

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explorer/marketcap. See also 'Walmart Market Capitalization' *Ycharts* (May 2019), accessed at <https://www.ycharts.com/companies>WMT>. A year earlier, Walmart's market cap of \$270 million was a quarter of Amazon's market capitalization.

<sup>113</sup> E Picardo 'Eight of the World's Top Companies are American' *Investopedia* (3 February 2019), accessed at <https://www.investopedia.com/articles/active-trading/111115/why-all-worlds-top-10-companies-are-american.asp>.

<sup>114</sup> D Neumark, J Zhang & S Ciccarella 'The Effects of Wal-Mart on Local Labour Markets' (2008) 63(2) *Journal of Urban Economics* 405, 427–429.

<sup>115</sup> J Logan 'The Mounting Guerrilla War against the Reign of Wal-Mart' (2014) 23(1) *New Labor Forum* 22, 25.

<sup>116</sup> D Yohn 'Walmart Won't Stay on Top if its Strategy is "Copy Amazon"' *Harvard Business Review Digital Articles* (21 March 2017); J Freund 'Walmart is Losing the Battle with Higher Costs – And Investors' *Bloomberg* (17 May 2018), accessed at <https://www.bloomberg.com/news/articles/2019-03-01/hold-the-revolution-roberts-keeps-joining-high-court-liberals>.

<sup>117</sup> L Thomas & N Wells 'Here's a list of Where Walmart is Closing More than 60 Sam's Club Stores' *CNBC* (12 January 2018), accessed at <https://www.cnn.com/2018/01/12/heres-a-map-of-where-walmart-is-closing-more-than-60-sams-club-stores.html>.

<sup>118</sup> O Mitchell 'Robots Saving Retail from an Apocalypse' *AlleyWatch* (4 May 2018), accessed at <https://www.alleywatch.com/2018/05/robots-saving-retail-from-an-apocalypse/>; A Wolf 'I, Robot: Walmart is Testing Would-be R2D2's in 50 stores' (2 April 2018) 33(5) *TWICE: This Week in Consumer Electronics* 8.

<sup>119</sup> O Mitchell 'Robots Saving Retail From An Apocalypse' *AlleyWatch* (4 May 2018), accessed at <https://www.alleywatch.com/2018/05/robots-saving-retail-from-an-apocalypse/>.

2019.<sup>120</sup> It now ranks second behind Amazon in terms of e-commerce – literally supplying everything that customers who either must stay-in-place or who no longer prefer to shop in stores need or want. While forays into food delivery may have required the hiring of new workers, such hires have been more than offset by layoffs in stores; layoffs enabled in no small part by AI software and hardware that can check stock and then actually move products from the warehouse floor to the warehouse door and on to the trucks that take them to your door.

However, Walmart's second place finish to Amazon in 2020 does not leave it close to Amazon's increasing dominance of the sector. Thanks to the pandemic, and how it had already positioned itself, Amazon became the first \$2-trillion market capitalisation company. Its ability to double its worth over the course of a single year flowed from prior planning (such as the purchase of Whole Foods in 2017), its ability to use a variety of sophisticated AI platforms, large-scale automation throughout its own operation and extensive distribution networks capable of delivering food within a couple of hours and almost every item in its vast A to Z inventory within a day. One shouldn't expect Amazon to do anything but keep the hammer down. Just as the first wave of the pandemic appeared to ease, Amazon announced that it would bring the autonomous checkout technology employed in its Amazon Go stores to Whole Foods in 2021.<sup>121</sup>

Whilst such technology might not appear to be as good a fit at a large South African Pick n Pay – with its heterogenous, multi-class clientele – as opposed to the middle class and upper-middle class too busy to shop or who prefer Woolworths, there's no reason one could not employ automated payment and retain just a few checkout tills. Indeed, to the extent that electronic transfers through cellphones has become somewhat ubiquitous in South Africa, there's no reason that it can't be rolled out in larger sprawling supermarkets with a decent in-store signal. However, as with everything else, South Africa is behind the curve and Woolworths doesn't appear capable of replicating the speed with which Amazon created Whole Food's two-hour door-step delivery. For same-day home delivery speed, one has to slum it and order online from Checkers.

In 2019, the acceleration of job loss through automation seemed hard to square with a US unemployment rate of less than 4% in January 2019.<sup>122</sup> It's now easier to see in light of the COVID-19 pandemic generated high of 15% in April 2020 – and the 11 million workers who remain unemployed and the 140 000 who lost their jobs in December 2020. Normally, 4.6% unemployment has been defined as full employment by the US Congressional Budget Office,<sup>123</sup> as businesses change (fail or succeed) and people move

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<sup>120</sup> C Liu 'Walmart is an Ecommerce Winner During Pandemic' *EMarketer* (25 May 2020), accessed at [https://www.emarketer.com/content/walmart-is-an-ecommerce-winner-during-pandemic?utm\\_source=Triggermail&utm\\_medium](https://www.emarketer.com/content/walmart-is-an-ecommerce-winner-during-pandemic?utm_source=Triggermail&utm_medium).

<sup>121</sup> D Keyes 'Amazon Plans to Roll Out the Tech It Uses at Its Go Stores to Whole Foods Locations in 2021' *Business Insider* (26 August 2020), accessed at [https://www.businessinsider.com/amazon-go-tech-could-come-to-whole-foods-2021-2020-8?IR=T&utm\\_](https://www.businessinsider.com/amazon-go-tech-could-come-to-whole-foods-2021-2020-8?IR=T&utm_).

<sup>122</sup> 'The Employment Situation – January 2019' *Bureau of Labour Statistics* (2019), accessed at <https://www.bls.gov/news.release/pdf/empisit.pdf>.

<sup>123</sup> J Zagorsky 'What Is Full Employment? An Economist Explains The Latest Jobs Data' *The Conversation* (4 May 2018), accessed at <https://theconversation.com/what-is-full-employment-an-economist-explains-the-latest-jobs-data-95908>.

from one job to another. This low level of unemployment has led many scholars to discount the potential costs of the ‘creative destruction’ of these novel forms of automation.

David Autor, whilst making some interesting observations, also makes some standard errors. He writes as follows: ‘Production of restaurant meals, cleaning services, haircare, and personal fitness is neither strongly complemented nor substituted by current technologies; these sectors are “technologically lagging”.’<sup>124</sup> Even if it were true some time ago, that proposition no longer holds. One example is the spectacular success of Peloton. Peloton enables a person to put a high-tech spin bike in their home with a nearly infinite number of televised or recorded classes in which they might participate. (Famous athletes will even compete with one another in the privacy of their own homes – in the absence of live sporting events or the once safe gym.) The consequence has been a dramatic decrease in the number of spin class instructors to run classes. As for restaurant meals remaining within the domain of humans, pizza-making robots have been replacing their human counterparts at a staggering rate.<sup>125</sup> These examples reflect but two common mistakes made about the accelerating speed of both novel business models and technological innovation. Autor repeats the error – more egregiously – when analysing the accelerating use of novel high-tech innovations and the changing manner of their use. Autor writes:

What explains the slowing growth of abstract task-intensive employment? One interpretation is that automation, information technology, and technological progress in general are encroaching upward in the task domain and beginning to substitute strongly for the work done by professional, technical, and managerial occupations. While one should not dismiss this possibility out of hand, it doesn’t fit well with the pattern of computer and software investment. If information technology is increasingly replacing workers high in the skill distribution, one would expect a surge of corporate investment in computer hardware and software ... To me, the evidence ... suggests a temporary dislocation of demand for information technology capital during the latter half of the 1990s, followed by a sharp correction after 2000. I suspect that the huge falloff in information investment may have dampened innovative activity and demand for high-skilled workers more broadly.<sup>126</sup>

In fact, businesses have rapidly moved away from buying hardware and software and turned toward renting servers on demand from Amazon and Microsoft as well as leasing software.<sup>127</sup> One reason for this shift is that you can move the cost from the balance sheet to the income statement. These business practices reduce monthly costs.<sup>128</sup> The utilisation of such new technologies such as cloud-based computing platforms and software services has, in other words, led to a decrease in the purchase of hardware and software. Again: the payments for these novel technologies are no longer classified as an investment. The result of the change in technology and business models made Amazon, Apple, Alphabet and Microsoft four of the first \$1-trillion capitalised companies in the world, and Amazon

<sup>124</sup> D Autor ‘Why Are There Still So Many Jobs? The History and Future of Workplace Automation’ (2015) 29 *Journal of Economic Perspectives* 3, 7.

<sup>125</sup> J Zorthian ‘A Pizza-Making Robot’ *Time* (27 February 2017) 27.

<sup>126</sup> D Autor ‘Why Are There Still So Many Jobs? The History and Future of Workplace Automation’ (2015) 29 *Journal of Economic Perspectives* 3, 21–22.

<sup>127</sup> T Muhammad ‘Rent-a-Server: The Latest Trend in Business Software’ (1999) 30(5) *Black Enterprise* 48.

<sup>128</sup> S Malik & F Huet ‘Virtual Cloud: Rent Out the Render Resources’ (2011) 2011 *International Conference for Internet Technology and Secured Transactions* 536.

the first \$2-trillion capitalised company.<sup>129</sup> Autor makes one final argument that's fatal to his analysis of the acceleration of technology, automation and (potentially) permanent unemployment:

The ongoing automation of warehouses provides another example. Large online retailers, such as Amazon.com, Zappos.com, and Staples, operate systems of warehouses that have traditionally employed legions of dexterous, athletic 'pickers,' who run and climb through shelves of typically non-air-conditioned warehouses to locate, collect, box, label, and ship goods. There is at present no cost-effective robotic facsimile for these human pickers. The job's steep requirements for flexibility, object recognition, physical dexterity, and fine motor coordination are too formidable.<sup>130</sup>

That's a factually incorrect depiction of how highly automated warehouses work: machines actually scan shelves to determine stock and then move that stock to the next stop on a company's distribution network. Moreover, you don't even need sophisticated coders to do so. Software now builds software.<sup>131</sup> While many now understand the perils of this new scientific, economic, social and political revolution,<sup>132</sup> few appreciate its speed. Rapid acceleration constitutes one of the primary barriers to solving the social disruption caused by AI, automation and other disruptive technologies. As the US National Intelligence Council Report – *Global Trends 2030* – noted in 2013:

The present recalls past transition points – such as 1815, 1919, 1945, and 1989 – when the path forward was not clear-cut and the world faced the possibility of different global futures. We have more than enough information to suggest that however rapid change has been over the past couple [of] decades, *the rate of change will accelerate in the future.*<sup>133</sup>

A mere four years later, the US National Intelligence Council Report *The Paradox of Progress* painted a grimmer picture.<sup>134</sup> The acceleration of this book's decalogue of wicked problems had led the NIC to acknowledge that of the possible four general outcomes portrayed in 2013,<sup>135</sup> the most dire has become the most likely. In particular, *The Paradox of Progress* noted (prior to the COVID-19 pandemic) that the *acceleration* of change (driven in part by permanent technological unemployment) will, in the next five years,

see rising tensions within and between countries [and] *global growth will slow*. While decades of global integration and advancing technology enriched the richest and lifted billions out of poverty, mostly in Asia, it also hollowed out Western middle classes and stoked pushback against globalization. Migrant flows are greater now than in the past 70 years, raising the specter of drained welfare coffers and increased competition for jobs, and reinforcing nativist,

<sup>129</sup> M Gurman 'Apple Becomes First US Company to Hit \$1 Trillion Dollar Value' *Bloomberg News* (2 August 2018), accessed at <https://www.bloomberg.com/news/articles/2018-08-02/apple-becomes-first-u-s-company-to-hit-1-trillion-market-value>; A Bhattacharai 'Amazon Becomes the Country's Second \$1 Trillion Dollar Company' *The Washington Post* (4 September 2018), accessed at [https://www.washingtonpost.com/business/2018/09/04/amazon-becomes-countrys-second-trillion-company/?utm\\_term=.c844ae1b2e4a](https://www.washingtonpost.com/business/2018/09/04/amazon-becomes-countrys-second-trillion-company/?utm_term=.c844ae1b2e4a).

<sup>130</sup> D Autor 'Why Are There Still So Many Jobs? The History and Future of Workplace Automation' (2015) 29 *Journal of Economic Perspectives* 3, 23–24.

<sup>131</sup> An example is Bubble, an application that allows one to build other online applications. 'You Don't Need to be a Coder to Build Software' *Bubble* (2019), accessed at <https://bubble.is/>.

<sup>132</sup> L Kello 'The Meaning of Cyber Revolution: Perils to Theory and Statecraft' (2013) 38 *International Security* 7, 22–40.

<sup>133</sup> National Intelligence Council *Global Trends 2030* (2013) ('*Global Trends*'). (Emphasis added)

<sup>134</sup> National Intelligence Council *The Paradox of Progress* (2017) ('*Paradox of Progress*').

<sup>135</sup> National Intelligence Council *Global Trends 2030* (Identifies and describes four major trends.)

anti-elite impulses. *Slow growth plus technology-induced disruptions in job markets will threaten poverty reduction and drive tensions within countries in the years to come, fueling the very nationalism that contributes to tensions between countries.*<sup>136</sup>

The COVID-19 induced crash of 2020 led to a contraction of 50% in South Africa in Q2.<sup>137</sup> While there was a significant rebound in growth in Q3, businesses are reacting much as they had during and after the great recession of 2008/9. Nazmeera Moola, Head of SA Investments at Ninety One noted that ‘a lot of service industry jobs, such as waiters ... that were shed during lockdown ... are slowly coming back on stream [and] a lot of larger companies are looking at their cost bases and workforce [in a manner that will] affect employment *negatively* over the next year in South Africa.’<sup>138</sup> Even Colin Coleman – when offering an otherwise pragmatically urgent prescriptive analysis – concedes that an unemployment rate that now stands at 50% may be hard to reverse unless an extremely dramatic array of interventions are taken by the government *now* to prevent South Africa from passing a socio-economic tipping point beyond which a return to even normally *abnormal levels* of unemployment and stunted growth is possible.<sup>139</sup>

But let’s imagine some of Coleman’s insightful interventions are taken on board and vigorously pursued by South Africa’s rather supine government. Dambisa Moyo writes that:

[Against a background of increasingly] massive unemployment as a result of the crisis, [w]hen the recovery comes, it will likely be driven heavily by technology, raising the prospect of labor-replacing automation and the creation of a jobless underclass or precariat. As such, many of the current job losses likely will not be temporary. Rather, they will hasten a structural shift toward a more automated, digitized workforce with fewer humans and more long-term unemployment.<sup>140</sup>

<sup>136</sup> National Intelligence Council *The Paradox of Progress* (2017) ix–xi. (Emphasis added)

<sup>137</sup> Ed Stoddard ‘Lockdown Smackdown: SA Economy May Have Contracted More than 50% in Q2’ *Daily Maverick* (7 September 2020), accessed at [https://www.dailymaverick.co.za/article/2020-09-07-lockdown-smackdown-sa-economy-may-have-contracted-more-than-50-in-q2/?utm\\_medium=email&utm](https://www.dailymaverick.co.za/article/2020-09-07-lockdown-smackdown-sa-economy-may-have-contracted-more-than-50-in-q2/?utm_medium=email&utm).

<sup>138</sup> *ibid.* (Emphasis added)

<sup>139</sup> C Coleman ‘Making South Africa Whole’ *Project Syndicate* (4 September 2020), accessed at [https://www.project-syndicate.org/onpoint/south-africa-economic-growth-plan-by-colin-coleman-2020-08?utm\\_source](https://www.project-syndicate.org/onpoint/south-africa-economic-growth-plan-by-colin-coleman-2020-08?utm_source). Coleman’s growth plan begins with a rather bleak caveat:

No society can survive with 50% unemployment, yet that is exactly what South Africa [is] facing ... Joblessness alone, exacerbated by the COVID-19 pandemic, has forced the country into a state of economic emergency.

<sup>140</sup> D Moyo ‘The Post-Pandemic Economy’s Barriers to Growth’ *Project Syndicate* (28 August 2020), accessed at <https://www.project-syndicate.org/onpoint/post-pandemic-economy-five-barriers-to-growth-by-dambisa-moyo-2020-08>. Other economists have been equally willing to not pull their punches. J Galbraith ‘The Illusion of a Rapid US Recovery’ *Project Syndicate* (9 June 2020), accessed at <https://www.project-syndicate.org/commentary/united-states-economy-illusions-of-reopening-by-james-k-galbraith-2020-06>. Galbraith writes:

[W]hereas cars, televisions, and household appliances drove US consumer demand in the 1960s, a much larger share of domestic spending today goes (or went) to restaurants, bars, hotels, resorts, gyms, salons, coffee shops, and tattoo parlors, as well as college tuition and doctor’s visits. Tens of millions of Americans work in these sectors. Finally, American household spending in the 1960s was powered by rising wages and growing home equity. But wages have been largely stagnant since at least 2000, and spending increases since 2010 were powered by rising personal and corporate debts ... *Mainstream economics pays little attention to such structural questions*. Instead, it assumes that business investment responds mostly to the consumer, whose spending is dictated equally by income and desire. The

South Africa already had a 30% precariat<sup>141</sup> before the pandemic. South Africa's current 50% precariat must now contend with an economy hobbled by persistent loadshedding by Eskom, a pandemic that may take quite some time to end (especially with delayed access to and diminished efficacy of extant vaccines and new treatment modalities), depressed consumer spending and diminished business confidence. Eskom's failures and government resistance to private energy production and low-cost green technology are particular causes for concern:

Eskom's unexpected escalation of load shedding this week has confirmed that South Africa's post-Covid-19 economic recovery will be throttled by energy constraints, and that unless swift action is taken to support private electricity generation, crippling power cuts will continue for years ... Eskom insists that its new programme of stepped-up maintenance, which aims to address decades of neglect and mismanagement, will end load shedding within 18 months. But it is increasingly clear that this target will not be met, given the scale of problems at its poorly performing coal-fired power stations ... The solution is for the government to take bold policy initiatives enabling all of Eskom's customers – industries, municipalities, businesses, farms and households – to rapidly bring on new generation capacity with reliable, low cost and environmentally friendly wind and solar PV installations, together with battery storage ... But policy paralysis and cumbersome, time-consuming regulations are still hobbling a process that could address the widening gap between supply and demand of electricity within just six to 18 months ... In the midst of the crisis that South Africa now faces, the steps the government has taken to enable self-generation are too little, and may quickly become too late. By 2030, several of Eskom's old coal-fired plants are due to be decommissioned, taking about a quarter of its existing capacity offline, and there is nothing in the pipeline to replace them.<sup>142</sup>

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distinction between 'essential' and 'superfluous' does not exist. Debt burdens are largely ignored. But demand for many US-made capital goods now depends on global conditions. Orders for new aircraft will not recover while half of all existing planes are grounded. At current prices, the global oil industry is not drilling new wells. Even at home, though existing construction projects may be completed, plans for new office towers or retail outlets won't be launched soon. And as people commute less, cars will last longer, so demand for them (and gasoline) will suffer. Faced with radical uncertainty, US consumers *will* save more and spend less. Even if the government replaces their lost incomes for a time, people know that stimulus is short term. What they do not know is when the next job offer – or layoff – will come along. Moreover, people do distinguish between needs and wants. Americans need to eat, but they mostly don't need to eat out. They don't need to travel. Restaurant owners and airlines therefore have two problems: they can't cover costs while their capacity is limited for public-health reasons, and demand would be down even if the coronavirus disappeared. This explains why many businesses are not reopening even though they legally can. Others are reopening, but fear they cannot hold out for long. *And the many millions of workers in America's vast services sector are realizing that their jobs are simply not essential. ... America's economic plight is structural.* It is not simply the consequence of Trump's incompetence or House Speaker Nancy Pelosi's poor political strategy. *It reflects systemic changes over 50 years* that have created an economy based on global demand for advanced goods, consumer demand for frills, and ever-growing household and business debts. This economy was in many ways prosperous, and it provided jobs and incomes to many millions. Yet it was a house of cards, and COVID-19 has blown it down. 'Reopen America' is therefore an economic and political fantasy. Incumbent politicians crave a cheery growth rebound, and the depth of the collapse makes possible some attractive short-term numbers. But taking them seriously will merely set the stage for a new round of disillusion.

Comparable – or frankly far worse – economic and political faultlines also reflect the extent to which South Africa's political and economic elites but continue to extract what wealth the society has on offer.

<sup>141</sup> Precariat refers to persons who have never held any gainful employment – and likely never will.

<sup>142</sup> C Yelland & M Isa 'Power Cuts Will Stifle South Africa's Post-Covid Economic Recovery' *Daily Maverick* (4 September 2020), accessed at <https://www.dailymaverick.co.za/>

That's hardly an environment conducive to the creation of new jobs – or doing anything to alleviate the plight of South Africa's increasingly large precariat.

### G. On Permanent Technological Unemployment Due to Artificial Intelligence, Automation and Other Disruptive Technologies – Riders and Caveats

In late 2019, prognosticators had concluded that 'machines' and 'artificial intelligence' will have *some* responsibility for 50% of formal work by 2030.<sup>143</sup> (COVID-19 has likely moved that date forward by five years.) That number is worth keeping in mind prior to discussing the effects of automation, disruptive technologies and job loss (permanent technological unemployment) on South Africa. Some estimates placed potential job loss here at 67%.<sup>144</sup> So what does this global percentage (of formal work routines) – 50% – mean?

Not surprisingly, the captains of industry and global elites see the number in rosy terms. At the World Economic Forum (WEF) at Davos, these privileged and powerful few see 50% in terms of making banal tasks easier and creating more job opportunities:

Machines and automated software will be handling fully half of all workplace tasks within seven years, a new report from the World Economic Forum forecasts. But the group said technologies such as artificial intelligence, robotics, and precision medicine, could create more jobs than they threaten. In a study of executives and specialists across 12 industries, published Monday, the WEF concluded that this so-called 'Fourth Industrial Revolution' could create 133 million jobs globally, while 75 million workers may be displaced.<sup>145</sup>

Of course, even global elites know that caveats are in order for such glowing predictions of a brave, new world. Here's the sting in the tail. Saadia Zahidi, head of the WEF's Center for the New Economy and Society, asserts, quite rightly, that:

Companies have a 'moral and economic imperative' to invest in retraining and continuing education for their employees. 'Without proactive approaches, businesses and *workers may lose out.*'<sup>146</sup>

But since when has an *enforceable* global social contract existed that placed the onus upon, or saving the day, on private enterprise (or state-controlled entities that take on the appearance of firms)? The italicised word – *enforceable* – provides a substantial part of

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article/2020-09-04-power-cuts-will-stifle-south-africas-post-covid-economic-recovery/. Needless to say, as of August 2020, South Africa had hardly entered a Post-COVID-19 world. Not a single nation has. Thus, Yelland and Isa's analysis fails to take into account an ongoing pandemic-induced slowdown that will extend through 2021 (even if a low efficacy vaccine finds its way to South Africa in 2021 and 2022), and a recovery that will only haltingly start once the pandemic is truly under control.

<sup>143</sup> It has been estimated that around 50% of the activities in the global economy could be automated by 2030. 'Jobs Gained, Jobs Lost: Workforce Transitions in a Time of Automation' *McKinsey Global Institute* (28 November 2017), accessed at <https://www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages>. See also Centre for the New Economy and Society / World Economic Forum *The Future of Jobs Report 2018*, accessed at [http://www3.weforum.org/docs/WEF\\_Future\\_of\\_Jobs\\_2018.pdf](http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf).

<sup>144</sup> Citi GPS: Global Perspectives and Solutions *Technology at Work V2.0: The Future is Not What It Used to Be* (January 2016) 4, accessed at [https://www.oxfordmartin.ox.ac.uk/downloads/reports/Citi\\_GPS\\_Technology\\_Work\\_2.pdf](https://www.oxfordmartin.ox.ac.uk/downloads/reports/Citi_GPS_Technology_Work_2.pdf).

<sup>145</sup> J Kahn 'Machines to Handle Half of Work Tasks by 2025, Davos Group Says' *Bloomberg News* (16 September 2018), accessed at <https://www.bloomberg.com/news/articles/2018-09-17/machines-to-handle-half-of-work-tasks-by-2025-davos-group-says?>

<sup>146</sup> *ibid.* (Emphasis added)

the answer. Never. Voluntary compacts exist.<sup>147</sup> However, responsibility for enforcement remains primarily domestic, with some assistance from multinational entities.<sup>148</sup> Read with these caveats, and a reasonable expectation that businesses will not, on their own, change their behaviour, the WEF's recent report is consistent with prior reports by the WEF, academics, consultancies and governments which 'generally forecast that automation will destroy more jobs than it creates.'<sup>149</sup>

A Bank of England (BoE) study produced in 2015 forecast that as many as 80 million jobs in the United States and 15 million in the United Kingdom could be lost by 2035.<sup>150</sup> Since only 160 million jobs currently exist in the US,<sup>151</sup> the BoE report *appears* to reflect a 50% unemployment rate in 2035.<sup>152</sup> 2035? The United States shed roughly 40 million jobs in the first two months of COVID-19 related lockdowns, stay-in-place orders and decisions not to endanger personal wellbeing in the workplace. Of the recently unemployed, as Barrero, Bloom and Davis's May 2020 model reflects, up to 42% may see their jobs vanish permanently.

But even when automation generates new opportunities, the good news is often bad. Most new jobs are far less secure than in the past.<sup>153</sup> It's far cheaper to hire someone as a contractor or a freelancer – and not worry about overheads, healthcare insurance, pension funds and managing interpersonal relationships with other workers. Workers will carry the burden of trying to predict what new skills for new forms of employment are required. Two signs of this looming problem exist. There's already a significant gap between the skills workers currently possess and their abilities to carry out new roles.<sup>154</sup> The indebtedness of students and the high rate of forfeiture on these loans have some analysts predicting an education bubble that could easily burst.<sup>155</sup> Despite these disjunctions and the assessment

<sup>147</sup> On the UN Global Compact, as a voluntary corporate social responsibility initiative, see M Kimbro & Z Cao 'Does Voluntary Corporate Citizenship Pay? An Examination of the UN Global Compact' (2011) 19 *International Journal of Accounting and Information Management* 288, 291–294.

<sup>148</sup> N Andrews 'Challenges of Corporate Social Responsibility (CSR) in Domestic Settings: An Exploration of Mining Regulation vis-à-vis CSR in Ghana' (2016) 47 *Resources Policy* 9, 13–15.

<sup>149</sup> Centre for the New Economy and Society / World Economic Forum *The Future of Jobs Report 2018*, accessed at [http://www3.weforum.org/docs/WEF\\_Future\\_of\\_Jobs\\_2018.pdf](http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf).

<sup>150</sup> E Charlton & S Hamilton 'Bank of England Chief Economic Stresses Downside Inflation Risk' *Bloomberg News* (12 November 2015), accessed at <https://www.bloomberg.com/news/articles/2015-11-12/bank-of-england-chief-economist-stresses-downside-inflation-risk>.

<sup>151</sup> 'The Employment Situation – January 2019' Bureau of Labor Statistics (2019), accessed at <https://www.bls.gov/news.release/pdf/empst.pdf>.

<sup>152</sup> Of course, population growth will likely increase the number of age-appropriate workers by 2035 – although the BoE report did not account for current declines in immigration. The influx of skilled and unskilled workers has historically enhanced overall economic productivity in the US. But it has become racist political fodder for the Republican Party – an organisation without principle. Just as pandemics harden borders, so too do scarce job prospects.

<sup>153</sup> W Bonvillian & S Sarma 'The Quest for Quality Jobs: US Unemployment Is Low, But So Are Salaries And Job Security. The Nation Needs to Address the Need for Better Job Security' (2018) *Issues in Science and Technology* 28, 29–30.

<sup>154</sup> Fiona Crawford 'Mind the Skills Gap' *Acuity* (1 March 2016) 48.

<sup>155</sup> B Miller 'The Student Debt Crisis is Worse than We Imagined' *The New York Times* (25 August 2018), accessed at <https://www.nytimes.com/interactive/2018/08/25/opinion/sunday/student-debt-loan-default-college.html>; M Phillips and K Russell 'The Next Financial Calamity is Coming. Here's What to Watch'

that 50% of current employees at large companies would need significant retraining in order to take advantage of new opportunities created by digital technology,<sup>156</sup> only half of existing firms are committed to rehabilitating and to retraining employees with critical positions within the firm and less than one-third plan to rehabilitate at-risk workers.<sup>157</sup>

Worse still are the kind of new jobs being created by AI in abundance. Artificial intelligence programmes may appear to be omniscient. However, they are still a shout away from possessing consciousness.<sup>158</sup> They can't yet tell you *why* an elephant, as opposed to an earwig, cannot perch itself atop the Eiffel Tower. For now. When it comes to certain high-level forms of recognition, AI programmes still require human beings to identify what they are 'seeing'. However, the more that we label, the faster the double encryption programmes that we use to sign into databases become outmoded. People are being hired to assist AI programmes with identifying trees, stop signs and crosswalks. As a rule, labellers are being hired at the lowest possible wages. In the United States, the average labeller is paid \$7–\$15 an hour. In Malaysia, the pay hovers around \$2.50 an hour.<sup>159</sup> In sum, the big winners are the artificial intelligence firms in the US, Europe and China. The losers are workers – who are barely paid a living wage (if one considers \$2.50/hr a living wage.)

But South Africa's fate might not be sealed – even if we take into account two primary points made repeatedly in this work:

1. In the face of an ongoing COVID-19 domestic and global economic crash, South Africa must now contend with an unemployment precariat of 50%. In Colin Coleman's own words, such a society is unsustainable. Moreover, significant limitations of critical economic drivers, primarily energy, render Coleman's growth plan rather implausible:
  - Eskom's inability to keep the lights on;
  - no existing power capacity beyond 2030 (by Eskom's own admission); and
  - the government's lassitude with creating the space for private power production or for the growth of green technology in the public sector.
2. While the technological revolution well underway has – in Acemoglu and Restrepo's words – created 'so-so productive effects', it has to date, and is unlikely in the future, to produce decent, if any, reinstatement effects. Current data supports the proposition that

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*The New York Times* (12 September 2018), accessed at <https://www.nytimes.com/interactive/2018/09/12/business/the-next-recession-financial-crisis.html>.

<sup>156</sup> *Centre for the New Economy and Society*/World Economic Forum *The Future of Jobs Report 2018* (2018) 17, accessed at [http://www3.weforum.org/docs/WEF\\_Future\\_of\\_Jobs\\_2018.pdf](http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf).

<sup>157</sup> *ibid.* at ix.

<sup>158</sup> E Strickland 'A New Role for Humans: Prepping Data So AI Can Learn to Do Our Jobs' *Spectrum* (30 November 2018), accessed at <https://spectrum.ieee.org/tech-talk/robotics/artificial-intelligence/in-the-coming-automated-economy-people-will-work-for-ai>.

<sup>159</sup> *ibid.*:

A recent study found that Mechanical Turkers earn a median wage of \$2 per hour, and only 4 percent of workers earned more than \$7.25 – the current federal minimum wage. Some workers in the crowd labor marketplace are beginning to speak out about their paltry income. Some Mechanical Turkers have banded together to campaign for higher payments per microtask, and have started an email campaign to Jeff Bezos asking ... for a way to represent themselves collectively.

See also R Schmelzer 'Data also Engineering, Preparation, and Labeling for AI 2019' *Cognilytica* (6 March 2019), accessed at <https://www.cognilytica.com/2019/03/06/report-data-engineering-preparation-and-labeling-for-ai-2019>.

the middle class, the working poor, the perpetually underemployed and the precariat will see only worsening job prospects.

Of course, the future is not yet written – and the meaning of present moment cannot be stated with clarity.<sup>160</sup> As a result, other academics have a somewhat less dour take on current affairs and whether the economic (social and political) trends on offer here correctly read the available data. Prior to the COVID-19 pandemic, less Cassandra-like authors suggested:

1. The data is inconclusive. Against a background of apparently diminished global productivity and growth, it's difficult to assess the effect of technological disruption on increases in unemployment and decreases in wages at the lower ends of the employment spectrum. However, even where one can see how automation and AI can create productivity effects without reinstatement effects, one must be careful not to generalise such findings across nations or across different sectors of the economy in different nations.<sup>161, 162</sup>
2. Other authors recognise the power of the arguments made by Frey and Osborne, and Acemoglu and Restrepo. However, they contend that the uptake of job-killing automation is a function of a number of policy decisions and institutional inclinations that are not inevitable. These perverse and extractive economic and legal institutional structures and incentives embrace:

tax systems [that] typically favour the substitution of capital for labour through subsidies for the former and payroll taxes for the latter ... large tech companies also have a crucial role in shaping the nature and trajectory of research ... [I]n particular, their innovation strategies and business models [that] are focussed on removing the human element of production ... the dominance of these companies in innovation clusters [that] shapes the industry and, through collaboration with universities, the research agenda, leading to a risk of lock-in to a particular path of development of AI and machine learning technologies [and worst of all, as public sector] direction of innovation has receded, and private-sector objectives have taken the lead, a further boost has been given to research that delivers short-term profits (and labour-shedding) over social welfare objectives, such as the development of technologies that complement labour and encourage employment sustenance or creation.<sup>163</sup>

However, this critique relies on Acemoglu and Restrepo's own conclusions – which likewise recognise that the contingency of labour-eliminating automation depends on

<sup>160</sup> Although as my friend and colleague George Abraham notes, unless one is truly wealthy, the ability to insulate oneself from the current effects of a global pandemic, steep economic reversals, the effects of climate change or this decade's pernicious political developments is severely limited.

<sup>161</sup> A Gentili, F Compagnucci, M Gallegati & E Valentini 'Are Machines Stealing Our Jobs?' (2020) 13 *Cambridge Journal of Regions, Economy and Society* 153, accessed at <https://doi.org/10.1093/cjres/rsz025>.

<sup>162</sup> N Leigh, B Kraft & H Lee 'Robots, Skill Demand and Manufacturing in US Regional Labour Markets' (2020) 13 *Cambridge Journal of Regions, Economy and Society* 77, accessed at <https://doi.org/10.1093/cjres/rsz019>:

Despite the divergent findings of the nascent robotics-impact literature, they are not necessarily contradictory. Differing results may be the result of the use of different methods, data sources, geographies and time periods in question. For example, robots may simultaneously drive productivity growth with little job destruction when aggregated across the EU and OECD member states ... and displace workers and reduce salaries in the USA at the same time.

<sup>163</sup> D Spencer & G Slater 'No Automation Please, We're British: Technology and the Prospects for Work' (2020) 13 *Cambridge Journal of Regions, Economy and Society* 117, accessed at <https://doi.org/10.1093/cjres/rsaa003>.

the arc of future political and economic agendas (that could be otherwise, but thus far have not.)<sup>164</sup>

3. The extent to which firms adopt substitution technology – in which workers are replaced in giant leaps – or complementary technology depends upon their size:

Prior studies ... note that smaller Midwestern manufacturers tend towards incremental, path-dependent adjustments to changing market conditions, rather than pursuing hare-like leaps – implying a preference for complementary rather than substitutive technologies. In [a] study of Dutch automation and employment data, [researchers] found that large firms were more likely to lay off workers during a spike in automation than were smaller firms, and firms with fewer than 100 employees were 1.5 times less likely to experience spikes in automation spending than firms with more than 500 employees.<sup>165</sup>

4. Of course, the quite work recent of David Autor – Daryl Acemoglu’s colleague at MIT – cannot be ignored. In his recent publication, *The Work of the Future: Building Better Jobs in an Age of Intelligent Machines*, Autor and his team of colleagues note that:

Yet, if our research [over the past two and a half years] did not confirm the dystopian vision of robots ushering workers off of factory floors or artificial intelligence rendering superfluous human expertise and judgment, it did uncover something equally pernicious: Amidst a technological ecosystem delivering rising productivity, and an economy generating plenty of jobs (at least until the COVID-19 crisis), we found a labor market in which the fruits are so unequally distributed, so skewed towards the top, that the majority of workers have tasted only a tiny morsel of a vast harvest.<sup>166</sup>

First, without dismissing the huge study’s analysis and findings, it is worth noting Autor’s admission that the team’s research occurred prior to the COVID-19 pandemic. Thus, as with other great recessions, the business models of many firms have been substantially altered. Advanced economies, such as the United States, no longer enjoy unemployment rates below 4%. Instead, as the pandemic set historic numbers for infections and fatalities in North America, Europe, South America, Africa and parts of Asia, businesses able to adapt to lockdowns, stay-in-place orders and other restrictions have altered their business models and adopted new disruptive technologies.

Second, his conclusions about what must change under current conditions do not, in fact, differ profoundly from the conclusions drawn by Acemoglu and Restrepo. Given that ‘COVID-19 [may be] an automation-forcing event ... we will be living with the effects of COVID-19 on technology and work for a long time, though those effects will look different from what anyone had anticipated in 2018.’<sup>167</sup> In order to address the unequal reinstatement effects of COVID-19 as an automation-forcing event, alongside

<sup>164</sup> *ibid.* See also A Dignam ‘Artificial Intelligence, Tech Corporate Governance and the Public Interest Regulatory Response’ (2020) 13 *Cambridge Journal of Regions, Economy and Society* 37, accessed at <https://doi.org/10.1093/Cjres/Rsaa002>. Dignam also notes the extent to which private ownership of novel technologies determines what gets developed, how it gets used, and who wins out from automation and who loses out. Thus, the regulatory state has an important role to play in mitigating the harmful effects of AI and automation.

<sup>165</sup> A Waldman-Brown ‘Redeployment or Robocalypse? Workers and Automation in Ohio Manufacturing SMMEs’ (2020) 13 *Cambridge Journal of Regions, Economy and Society* 99, accessed at <https://doi.org/10.1093/cjres/rsz027>.

<sup>166</sup> D Autor, D Mindell, E Reynolds et al. *The Work of the Future: Building Better Jobs in an Age of Intelligent Machines* (November 2020). (Emphasis added)

<sup>167</sup> *ibid.*

other developments in AI, ‘we ... [must] make sure that technological advances, whenever they come, yield prosperity that is widely shared.’<sup>168</sup> As I and others, such as Frey and Acemoglu, have made clear, the state will have to step in and place labour on a more equal footing with capital. Such interventions as higher minimum wages, basic income grants, universal health care, and free tertiary education for all aligns with what a 21st century economy asks of a just and equitable state. With respect to such measures, there’s virtually unanimous agreement. But it requires radical reform. Only 30% of men and 40% of women currently receive a college education in the United States (that number falls to 6% overall in South Africa). If the Biden Administration can, through legislation supported by both Democratically-controlled houses of Congress, forgive up to \$50 000 of debt per student, the effect would be profound in terms of enabling the poorest and most marginalised groups of students in terms of pursuing more meaningful and gainful employment. It would also create greater access to basic public basic goods – from food, housing, medical care, insurance and further education that might ‘fit’ new forms of employment. Moreover, like Acemoglu and Restrepo, Autor is clearly aware of the degree to which these technological advances ‘generate[s] a palpable fear of the future’ for the two-thirds of Americans without a college degree. The Trump Administration and its two campaigns tapped into a widespread ‘suspicion that technological progress will make the country wealthier while threatening livelihoods of many.’<sup>169</sup> Indeed, as Autor concludes: ‘This fear exacts a high price: political and regional divisions, distrust of institutions, and mistrust of innovation itself.’<sup>170</sup> For this deep-seated distrust and its manipulation by elites to maintain extractive political and economic power – at the price of functional democratic institutions – Autor and the rest can only hope for the best.

The picture that these more agnostic authors paint is not all that different from the more frightening portrait that dominates these pages. In both cases, scholars attempting to understand automation and permanent technological unemployment view these matters as contingent affairs. The assessments may vary, descriptively, depending on the nature or the sector of an economy reviewed. As a prescriptive matter, no one really wants to live in a dystopia – and the same political responses are on offer whether one takes a strong view or a weaker view of the degree of permanent technological unemployment that we are likely to see.

That said, when this author looks at the specific wicked problem of permanent technological unemployment – as accelerated by other exogenous wicked problems and as a function of problems of collective action – it’s difficult to dismiss its perilous significance for South Africa and other nations that are neither politically or economically inclusive. Finally, if success when faced with the problem of permanent technological unemployment is contingent upon the existence of a nation-state with genuinely inclusive political and economic institutions, then at the present moment it is absolutely safe to say that such nationstates are a small minority. Perhaps 10% of the world’s 200 nations count as full democracies – with genuinely inclusive political and economic institutions. The 50 or so flawed democracies may be far less inclined toward enhanced welfare programmes or protective regulatory interventions with respect to AI, automation and other disruptive

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<sup>168</sup> *ibid.*

<sup>169</sup> *ibid.*

<sup>170</sup> *ibid.*

technologies. As for the other 130 nations that are more or less autocratic, the calculus of intervention will likely turn solely on the degree to which some form of systemic unemployment for a majority of denizens is necessary to maintain the stability of the elitist and extractive institutions (and classes) that run the place. Given those numbers, the wicked problem of permanent technological unemployment must be understood as a very real challenge.

## H. On Distributive Justice

In the 19th century, political theorists contended that the means of production would eventually lie firmly in the hands of the people.<sup>171</sup> Friedrich Engels expressed this romantic view of the disappearance of all forms of political and economic coercion (after a period of dictatorship by the proletariat) as follows:

The interference of the state becomes superfluous in one sphere after another, and then ceases of itself. The government of persons is replaced by the administration of things and the direction of the processes of production. The state is not abolished, it withers away.<sup>172</sup>

While the nation-state may be in trouble in many places,<sup>173</sup> Engels and Marx's historical materialism missed out on a bigger revolution than that which they identified with the industrial revolution. Ralph Waldo Emerson did not. In *Ode, Inscribed to William Channing*, Emerson wrote, in part:

Things are in the saddle,  
And ride mankind.  
There are two laws discrete,  
Not reconciled, –  
Law for man, and law for thing;  
The last builds town and fleet,  
But it runs wild,  
And doth the man unking.<sup>174</sup>

<sup>171</sup> J Bowle & R Arneson 'Political Philosophy: Western Political Philosophy to the End of the 19th Century' *Encyclopaedia Britannica* (29 October 2020), accessed at <https://www.britannica.com/topic/political-philosophy#ref10217>.

<sup>172</sup> F Engels *Herr Eugen Durbrings Revolution in Science* (1878), Part III, Chapter 2, accessed at [http://library.cqpress.com/teps/encyps\\_1775.1](http://library.cqpress.com/teps/encyps_1775.1). Engels advanced a similar vision of the future elsewhere:

The society which organizes production anew on the basis of free and equal association of the producers will put the whole state machinery where it will then belong – into the museum of antiquities, next to the spinning wheel and the bronze ax.

F Engels *Origins of the Family, Private Property, and the State* (1884), accessed at [http://credoreference.com/entry/bkpolsci/withering\\_away\\_of\\_the\\_state](http://credoreference.com/entry/bkpolsci/withering_away_of_the_state).

<sup>173</sup> D Broom 'These are the World's Most Fragile States in 2019' *World Economic Forum* (15 April 2019), accessed at <https://www.weforum.org/agenda/2019/04/most-fragile-states-in-2019>. Six of the 10 most fragile countries in the world are on the African continent: Somalia, South Sudan, the Democratic Republic of Congo, the Central African Republic, Chad and Sudan. The recent efforts to resolve genocidal violence first in Sudan (by creating South Sudan), and then to intervene with respect to sectarian violence in South Sudan have born virtually no fruit. 'South Sudan Country Profile' *BBC News* (16 February 2019), accessed at <https://www.bbc.com/news/world-africa-14069082>. Such instability extends to Europe, where one putative democracy annexes (and foments rebellion in) another troubled democracy. J Coman 'On the Frontline of Europe's Forgotten War in Ukraine' *The Guardian* (12 November 2017), accessed at <https://www.theguardian.com/world/2017/nov/12/ukraine-on-the-front-line-of-europes-forgotten-war>.

<sup>174</sup> R Emerson *Ode, Inscribed to William Channing* (1844).

Emerson identifies humanity's desire to accumulate things as a primary source of its travails. Without saying as much, Emerson saw slavery and the war that might be fought over America's original sin<sup>175</sup> as far less about emancipation, and largely, if not entirely, about who would have the capacity to accumulate things, and large stores of wealth and power. This path to perdition means that not only would human beings lose their souls to crass materialism and large-scale abuses of power (which could be mercantilist, monarchist, totalitarian, capitalist, socialist or communist), but that they would also become extensions of and controlled by the very machines and processes that they had created.<sup>176</sup> Emerson would hardly be surprised with where we find ourselves today. We have, without much by way of reflection, traded our privacy and actual engagement with others, for toys and platforms that turn us into bytes of information that can be bought and sold.<sup>177</sup> We did it. And we did it to ourselves.

We have become willing creators and captors of four companies that have or have had market capitalisation of over \$1 trillion – with Amazon<sup>178</sup> in the lead, and with Apple<sup>179</sup> Microsoft and Alphabet (Google's owner) not far behind.<sup>180</sup> That market capitalisation for each company is roughly equal to the market capitalisation of the entire Johannesburg Stock Exchange,<sup>181</sup> and was four times the GDP of South Africa in 2019.<sup>182</sup> These companies – and other technology firms such as Facebook and Twitter – operate globally and more or

<sup>175</sup> J Wallis *America's Original Sin: Racism, White Privilege and a Bridge to a New America* (2017).

<sup>176</sup> Consider the phenomenon of cellphone dependence amongst young adults. M Amidtaher, S Saadatmand, Z Moghadam, G Fathi & R Afshar 'The Relationship Between Mobile Cellphone Dependency, Mental Health and Academic Achievement' (2016) 4 *American Journal of Educational Research* 408, accessed at <https://doi.org/10.12691/education-4-5-8>. See also 'How Can Humans Keep the Upper Hand on Artificial Intelligence? Researchers have Shown how Human Operators Can Maintain Control over A System Comprising Several Agents That Are Guided By Artificial Intelligence' *ScienceDaily* (4 December 2017), accessed at [www.sciencedaily.com/releases/2017/12/171204094950.htm](http://www.sciencedaily.com/releases/2017/12/171204094950.htm).

<sup>177</sup> Z Smutny, V Janosik & R Cermak 'Generation Y and Internet Privacy: Implication for Commercialization of Social Networking Services' in Vladlena Benson, Ronald Tuninga & George Saridakis (eds) *Analyzing the Strategic Role of Social Networking in Firm Growth and Productivity* (2017) 95–119.

<sup>178</sup> A Bhattarai 'Amazon Becomes the Country's Second \$1 Trillion Dollar Company' *The Washington Post* (4 September 2018), accessed at [https://www.washingtonpost.com/business/2018/09/04/amazon-becomes-country-second-trillion-company/?utm\\_term=.c844ae1b2e4a](https://www.washingtonpost.com/business/2018/09/04/amazon-becomes-country-second-trillion-company/?utm_term=.c844ae1b2e4a).

<sup>179</sup> M Gurman 'Apple Becomes First US Company to Hit \$1 Trillion Dollar Value' *Bloomberg* (2 August 2018), accessed at <https://www.bloomberg.com/news/articles/2018-08-02/apple-becomes-first-u-s-company-to-hit-1-trillion-market-value>.

<sup>180</sup> M Sheetz 'Apple and Amazon Pass \$1 Trillion Dollars – Which Company Is Next?' *CNBC* (5 September 2018), accessed at <https://www.cnn.com/2018/09/05/the-next-companies-poised-to-hit-1-trillion.html>.

<sup>181</sup> The Johannesburg Stock Exchange is among the 20 largest stock exchanges in the world and is the largest on the African continent. *African Markets* 'About Johannesburg Stock Exchange' (11 September 2018), accessed at <https://www.african-markets.com/en/stock-markets/jse/about>. The market capitalisation of the Johannesburg Stock Exchange was around \$1.06 trillion on 8 February 2019. JSE 'JSE Markets' Weekly Statistics 20190208', accessed at <https://www.jse.co.za/services/market-data/market-statistics>.

<sup>182</sup> The World Bank reported South Africa's GDP in 2017 as \$348 871.65 million, or around \$0.39 trillion 'GDP (current US\$)', *World Bank* accessed at <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD>. By way of comparison, several European countries still outrank the likes of Apple and Amazon individually. France, for example, had a GDP in 2017 of around \$2.6 trillion. *ibid.* However, if the market capitalisation of the five largest technology companies in 2017 – Alphabet, Apple, Amazon, Facebook and Microsoft – are put together, they would easily outstrip France. *ibid.* Of course, like GDP, market caps can shift downward – as they have with Big Tech in 2019 (slightly).

less freely within national-socialist dictatorships such as China (which possesses its own sophisticated AI and its world-wide leading quantum 5G communications platform), security-oligarchies such as Russia, autocracies, theocracies, failed states as well as a dwindling number of liberal or social democracies.<sup>183</sup>

Current political and economic institutions around the world tend to be far more extractive than inclusive. These elitist arrangements raise critical existential questions about ‘what is to be done’ in those democracies that are, or aspire to be, inclusive in the face of disruptive new technologies that have had the tendency to turn polities into pyramids where wealth and power accumulate at the apex.

First, the manner in which we often think about changing political structures and systems will not address the ability of new technology to erase borders.<sup>184</sup> (That said, many repressive states and somewhat less repressive and more open societies do strike deals that enhance their capacity for overt subjugation and covert surveillance.<sup>185</sup>) Second, new technology not only disrupts existing patterns of exchange; it alters the manner in which human beings engage one another.<sup>186</sup> We become objects and treat others as objects.<sup>187</sup> (Or, as Jaron Lanier is apt to say in an anagram-way: our social media apps turn us into ASSHOLES.<sup>188</sup>)

Contemporary authors recognise the multiple ways in which modern technology not only disrupts economic arrangements (to the detriment of the many, and the benefit of the few), but alters the manner in which many (if not all) human beings derive meaning from life: work. When we return to the primary subject matter of this book, the wicked

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<sup>183</sup> Whether our own nascent democracy and our fellow democracies can control the extraordinary power that these information behemoths wield – given their ability to control political and social discourse – will determine the extent to which our polities meet the criteria for political (and economic) inclusivity or whether Amazon, Apple, Facebook, Google, and Twitter become the tail that wags the dog. F Fukuyama, B Richman, and A Goel ‘How to Save Democracy From Technology Ending Big Tech’s Information Monopoly’ *Foreign Affairs* (January/February 2021) accessed at <https://www.foreignaffairs.com/articles/usa/2020-11-24/fukuyama-how-save-democracy-technology?utm>.

<sup>184</sup> J Ismael & S Ismael ‘The Arab Spring and the Uncivil State’ (2013) 35 *Arab Studies Quarterly* 233, 236.

<sup>185</sup> J Gerschewski & A Dukalskis ‘How the Internet Can Reinforce Authoritarian Regimes: The Case of North Korea’ (2018) 19 *Georgetown Journal of International Affairs* 14, 17.

<sup>186</sup> One example is seen in a study which considered cellphone use among mothers, time spent with their children, and depression. G Newscham, M Drouin & B McDaniel ‘Problematic phone use, depression, and technology interference among mothers’ (2018) *Psychology of Popular Media Culture* 4-6, accessed at <https://doi.org/10.1037/ppm0000220>.

<sup>187</sup> ‘Slashdot: How Facebook’s WhatsApp Destroyed A Village’ *Slashdot Shameless Plug* (10 September 2018), accessed at <https://tech.slashdot.org/story/18/09/10/1051234/how-facebooks-whatsapp-destroyed-a-village>.

<sup>188</sup> J Lanier *Ten Reasons to Delete Your Social Media Accounts Right Now* (2018). Lanier contends that most of us have sold our souls – our dignity, our privacy, our conscience, our beliefs and our right to associate – for nothing. Instead, these rights have been repeatedly violated by those to whom we have willingly handed over our birth right. See also *Bernstein & Others v Bester NO & Others* 1996 (2) SA 751 (CC), 1996 (4) BCLR 449 (CC) at para 67:

[The right to privacy] consists essentially in the right to live one’s own life with a minimum of interference. It concerns private, family and home life, physical and moral integrity, honour and reputation, avoidance of being placed in a false light, non-revelation of irrelevant and embarrassing facts, unauthorised publication of private photographs, protection from disclosure of information, given or received by the individual confidentially.

problem of permanent technological unemployment, two primary questions arise. Jonathan Danaher expresses them as follows:

The first is one of distributive justice: how will the (presumed) efficiency gains from automated labour be distributed through society? The second is one of personal fulfilment and meaning: if people no longer have to work, what will they do with their lives?<sup>189</sup>

So far so good. But he then continues:

I set aside the first issue and focus on the second. In doing so, I make three arguments. First, I argue that there are good reasons to embrace non-work and that these reasons become more compelling in an era of technological unemployment. Second, I argue that the technological advances that make widespread technological unemployment possible could still threaten or undermine human flourishing and meaning, especially if (as is to be expected) they do not remain confined to the economic sphere. And third, I argue that this threat could be contained if we adopt an *integrative* approach to our relationship with technology.<sup>190</sup>

That approach seems deeply misguided, if not entirely mistaken. In fact, Danaher demonstrates his awareness that these issues cannot be so readily separated, when he writes that ‘widespread technological unemployment ... could still threaten or undermine human flourishing and meaning, especially if (*as is to be expected*) they do not remain confined to the economic sphere.’<sup>191</sup> It might be possible to discuss – loosely and positively – what life without employment might look like for those of us who currently possess *meaningful* employment. But one cannot consider that a point of departure if it’s ‘expected’ that the economic sphere married to a political sphere that permits increased accumulation of wealth and power will ‘*undermine human flourishing and meaning*’.<sup>192</sup>

Betsy Stevenson rightly reverses the order of priority. She notes that, in September of 2017, 41 economists from top universities in the United States were asked whether they:

strongly agreed, agreed, were uncertain, disagreed, or strongly disagreed with the following statement: ‘Rising use of robots and artificial intelligence in advanced countries is likely to create benefits large enough that they could be used to compensate those workers who are substantially negatively affected for their lost wages.’ The answer was clear: no one disagreed with that statement.<sup>193</sup>

An obvious question follows. Will the world’s politicians embrace redistributive schemes that would enable everyone to benefit sufficiently from these advances and to have covered any losses that may be imposed on persons whose skills have been supplanted by automation or artificial intelligence?

While no country has tied such redistribution to permanent technological unemployment, a small number of countries, states and cities have begun to experiment with more general schemes designed to protect its most vulnerable citizens from current disruptions. Most of these schemes are, currently, both a response to structural problems

<sup>189</sup> J Danaher ‘Will Life Be Worth Living in a World Without Work? Technological Unemployment and the Meaning of Life’ (2017) 23(1) *Science and Engineering Ethics* 41, accessed at <https://doi.org/10.1007/s11948-016-9770>.

<sup>190</sup> *ibid.* (Emphasis added)

<sup>191</sup> *ibid.* (Emphasis added) (I guess that has missed the last half-decade of elections.)

<sup>192</sup> *ibid.* (Emphasis added)

<sup>193</sup> B Stevenson ‘AI, Income, Employment and Meaning’ in A Agrawal, J Gans & A Goldfarb (eds) *The Economics of Artificial Intelligence: An Agenda* (2019).

related to wealth and income inequality, and an immediate answer to widespread dislocations caused by COVID-19.

Finland, a fairly homogeneous, happy and reasonably wealthy country of seven million, stopped an experiment with a Basic Income Grant (BIG) designed to spread the benefits of automation and compensate citizens for lost employment opportunities.<sup>194</sup> On the other hand, Spain, despite the depredations associated with COVID-19, has embraced a living wage grant designed to support the working poor and unemployed. Even middle-income nations such as Brazil have rolled out a Basic Income Scheme designed to insulate its most vulnerable citizens from the damage wrought by COVID-19. Moreover, given the adoption of a 'New Green Deal' in major party platforms on the left, one might also expect economic proposals such as BIGs to be revived should a decade long tilt toward right-wing populism be reversed by progressive agendas embraced by millennials. The possibilities and forms of such redistributive regimes in South Africa and elsewhere are taken up at greater length in Chapter V.

Stevenson provides a partial explanation for the lack of imagination or success in the United States with respect to redistributive programmes, enhanced welfare policies and progressive taxation, though her conclusions have far broader applications:

Much of the skepticism about being able to successfully redistribute income comes from a lack of trust that the political process will successfully manage redistribution in a world in which income is primarily generated by capital. The history of the last several decades has certainly not been encouraging on that front. The share of income held by the top 1% of the population has risen to nearly 20 percent, from around 10 percent in 1980, while the share going to the bottom 50 percent of the population has fallen to 12 percent from 20 percent in 1980. Currently we are failing to redistribute the gains from technological advances and so the concerns that distribution will be a challenge are supported by our recent past.<sup>195</sup>

It thus makes little or no sense to imagine what we might do with all our 'free time' – as Danaher does – until we have figured out how to ensure that the wealth distributed in any given society enables all persons to translate their capabilities into lives worth valuing.<sup>196</sup>

My current dystopian outlook envisages a future where increasing numbers of human beings are left bereft of meaningful work – and with too much idle time on their hands and nothing much to do.<sup>197, 198</sup> But for every dyspeptic pessimist, there's an eternal optimist. The social welfare optimists, as we have already glimpsed, offer two dominant alternatives. As Adam White notes, the programmes either 'give each citizen the same modest annual income; or give larger payments to citizens who pass a low income means test.' White offers yet a third possibility.<sup>199</sup>

<sup>194</sup> J Henley 'Finland to End Basic Income Trial after Two Years' *The Guardian* (23 April 2018), accessed at <https://www.theguardian.com/world/2018/apr/23/finland-to-end-basic-income-trial-after-two-years>.

<sup>195</sup> B Stevenson 'AI, Income, Employment and Meaning' in A Agrawal, J Gans & A Goldfarb (eds) *The Economics of Artificial Intelligence: An Agenda* (2019).

<sup>196</sup> A Sen *Development as Freedom* (1999).

<sup>197</sup> Various writers have considered such a scenario, and found that technological advances, free time, and material benefits do not in fact make us happier. H Arendt *Vita Activa* (1981) 16–22; D Model 'When the Chips Are Down: Taking Time to Pay Attention to Real Issues' (2011) 14(1) *College Quarterly* 1-3; J Surowiecki 'Technology and Happiness' (2005) 108 *Technology Review* 72.

<sup>198</sup> K Vonnegut *Player Piano* (1952).

<sup>199</sup> A White 'Automation: Beyond a Universal Basic Income' *Selected Works of Adam White* (21 June 2018),

His intuition pump addresses the vexed question of whether UBIs would necessarily create a net labour disincentive. Instead, it redistributes the *leisure* which otherwise accrues to the very wealthy. Thus, White's UBIs address something else – humankind's search for meaning – and one of the sources of my pessimism.<sup>200</sup> Instead of a cold future of anomie, he contends that some redistributive wealth would go to people who worked at DGOs ('Do Good Organisations').<sup>201</sup> Of course, DGOs already exist in most societies as NGOs or CSOs – or even parts of the state.<sup>202</sup> DGOs serve to provide meaning, and not just a replacement for consumption.<sup>203</sup>

According to White, DGOs would have several virtues. First, social relationships would be more caring, less transactional and not a function of coercion.<sup>204</sup> Second, and more germane for this book, humans displaced by 'predatory automation' would find new, perhaps more meaningful jobs.<sup>205</sup> Third, individuals and communities that have lost their employment due to automation or technological disruption would receive services and assistance from DGOs.<sup>206</sup> DGOs would actually create greater political agency – in democratic regimes – and thus greater accountability regarding the manner in which the wealth, the time and the opportunity (for the creation of meaning) are distributed.<sup>207</sup>

White's intuition pump still begs the question of whether states can raise sufficient revenue, under a revised social contract, to create DGOs designed to combat indolence

accessed at [www.bepress.com](http://www.bepress.com). See also A White 'A Universal Basic Income in the Superstar (Digital) Economy' (2019) 13 *Ethics and Social Welfare* 64. White argues that

the structural logic of the digital economy is to widen inequality, not only through its increasing automation of jobs but also in its efficiency in delivering ever greater profits to a smaller number of already-enriched organisations and individuals. Remedial actions that might be taken to mitigate the effects of some of the digital economy's structural flaws are interrogated here, with a particular focus on universal basic income (UBI) and stake-holding schemes. The paper considers whether the digital economy's inherent problems are of such magnitude that some sort of financial support for workers to buttress long periods of idleness, or to enable them to take risks in increasingly volatile and unstable global markets, is both desirable and politically feasible.

<sup>200</sup> V Frankel *Man's Search for Meaning* (1946). Life, as Frankel discovered from his concentration camp experiences, requires the identification of a purpose, and imagining and constructing that reality in the world.

<sup>201</sup> A White 'Automation: Beyond a Universal Basic Income' *Selected Works of Adam White* (21 June 2018) 3, accessed at [www.bepress.com](http://www.bepress.com).

<sup>202</sup> Though more likely a function of long-term social cohesion, China's public goods provision system shares some features of DGOs. J Duckett & G Wang 'Why Do Authoritarian Regimes Provide Public Goods? Policy Communities, External Shocks and Ideas in China's Rural Social Policy-Making' (2017) 69(1) *Europe-Asia Studies* 92, 104–106.

<sup>203</sup> S Acharya 'Disability Law Implementation: The Role of NGOs and INGOs in Nepal' (2017) 11 *NJA Law Journal* 253, 276; J Field, C Attwood, A Jarre, K Sink, L Atkinson & S Petersen 'Cooperation between Scientists, NGOs and Industry in Support of Sustainable Fisheries: The South African Hake Merluccius Trawl Fishery Experience' (2013) 83 *Journal of Fish Biology* 1019, 1030–1032; S Sabi & M Rieker 'The Role of Civil Society in Health Policy-Making in South Africa: A Review of the Strategies Adopted by the Treatment Action Campaign' (2017) 16 *African Journal for AIDS Research* 57, 60–62.

<sup>204</sup> A White 'Automation: Beyond a Universal Basic Income' *Selected Works of Adam White* (21 June 2018) 5, accessed at [www.bepress.com](http://www.bepress.com).

<sup>205</sup> *ibid.*

<sup>206</sup> *ibid.*

<sup>207</sup> *ibid.*

and to provide meaning. Welfare states have been undertaking such tasks for some time. The problem of permanent technological unemployment raises the question as to whether states can afford to fund individual DGO accounts when a primary source of income may come from corporations that have eliminated large swaths of employment.

No one would disagree with White's contention that:

Corporations do not create automation out of whole cloth; in an important sense technological innovation is the material edge of the evolving knowledge and opportunities handed down by previous generations. The normative claim is that the (qualifying) fruits of automation should be shared for the same reasons that the fruits of a language are shared.<sup>208</sup>

Corporations stand primarily on the shoulders of battalions and armies of individuals and communities across the planet who did not have a primarily extrinsic pecuniary interest in the knowledge that has been created over several millennia. What firms can do, as legal fictions,<sup>209</sup> is exploit that knowledge (and more) for their own commercial interest. Private corporations and state-owned or controlled enterprises need not acknowledge their indebtedness to individuals, communities or the occasional giant. Indeed, as currently structured, they try to avoid that indebtedness by dodging either taxes in liberal or social democracies,<sup>210</sup> or the requirement of sharing the accumulation of human intelligence that supports their innovations.<sup>211</sup> White only speaks to the former. (The form of indebtedness in the latter, while potentially subject to the same kinds of assessments made when awarding patents, and thus to some determination as to what is truly novel and worth rewarding, and what rightfully belongs to the commons, is not engaged by White.) With respect to the former, White writes as follows:

Taxes always modify the behavior of the actors positioned to pay the tax; the impact of avoidance can be as relevant as the intended institutional outcomes. The objection is that possible ways to tax fund the citizen accounts would be self-defeating ... Corporations and investors will simply move on to their more attractive opportunities. For this reason alone the DGO proposal is [deemed] unworkable in practice ... [My] reply is that the concern applies to the limit case but not to [all] realistic cases. It is an open question whether tax policies can be designed so as to not fatally disincentivize new automation. At issue is identifying the equilibrium condition between the opportunities of adequately funded DGOs and the opportunities foregone from taxation.<sup>212</sup>

White actually refuses to address this issue – leaving his intuition pump hanging in the air. We will revisit White's intuition pump and whether it is viable or not in South Africa in Chapter V. But good reasons exist to ask whether states such as South Africa with weak political and economic institutions are up to White's task. As matters stand, many of our SOEs are bankrupt and the country's coffers are close to empty.<sup>213</sup> If a bankrupt

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<sup>208</sup> *ibid.* at 11.

<sup>209</sup> S Schane 'The Corporation is a Person: The Language of a Legal Fiction' (1986) 61 *Tulane Law Review* 563.

<sup>210</sup> For a study on what has occurred in United Kingdom, see R Murray *Tax Avoidance* (2016).

<sup>211</sup> It takes a village to raise an innovation. Freeman, Nelson and Lundvall recognised this proposition through the concept of a National Innovation System. B Godin 'National Innovation System: The System Approach in Historical Perspective' (2009) 34 *Science, Technology and Human Values* 476.

<sup>212</sup> A White 'Automation: Beyond a Universal Basic Income' *Selected Works of Adam White* (21 June 2018) 9, accessed at [www.bepress.com](http://www.bepress.com).

<sup>213</sup> L Daniel 'State-Owned Enterprises: Which One Costs the South African Taxpayers the Most

South Africa cannot control its own SOEs<sup>214</sup> – as most recent state capture inquiries have revealed<sup>215</sup> – then we must ask whether it possesses the ability to control indigenous and non-indigenous multinational corporations.<sup>216</sup>

The questions of distributive justice raised by this not so new industrial revolution are only partially novel. Similar debates, initiated over the last two centuries, go on unabated today. While they are necessary, they don't quite capture the acceleration of permanent technological transformation and how difficult it will be to cabin the ramifications of this transformation. We return to questions of distributive justice in Chapter V when we consider the shape of new social contracts that might arise out of the ashes of recent economic cataclysms.

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Money?' *The South African* (23 July 2018), accessed at <https://www.thesouthafrican.com/state-owned-enterprises-which-one-costs-south-african-taxpayers-the-most-money/>.

<sup>214</sup> S Madonsela 'Critical Reflections on State Capture in South Africa' (2019) 11(1) *Insight on Africa* 113, 120–122; K Mashamaite & P Raseala 'Transgression of Corporate Governance in South Africa's State-Owned Enterprises' (2019) 16(1) *Bangladesh e-Journal of Sociology* 124, 130–131.

<sup>215</sup> Z Mahlati 'State Capture Inquiry: A Break Down of Events so Far' *IOL* (9 November 2018), accessed at <https://www.iol.co.za/news/politics/state-capture-inquiry-a-break-down-of-events-so-far-17841397>.

<sup>216</sup> I Chipkin & M Swilling, with C Peter, H Friedenstein, H Bhorat, L Mondli, M Buthelezi, M Qobo, N Prins & S Duma *Shadow State: The Politics of State Capture* (2018). Despite the naval-gazing, such problems are hardly unique to South Africa. A Fernandez *State Capture: How Conservative Activists, Big Businesses, and Wealthy Donors Reshaped the American States – and the Nation* (2019). Before Tammany Hall, there was another Tammany Hall. One doesn't have to be a cynic to suggest that it's Tammany Halls all the way down. Socrates and Plato were on to democracy's ills quite a long time ago.

## CHAPTER IV

### The Consequences of Permanent Technological Unemployment for South Africa

I'm sure you've seen it happen right before your eyes in Johannesburg – the City of Malls. Could it be 15 years since parking ticket attendants were replaced by machines? Did you ask why the perfectly functional Rosebank Mall closed for almost two years before reopening in 2018? Or why its new curves supplanted a more coherent split-level rectangle? Did you ask a shop owner how business was – at the same time that the three large restaurants closed on the faux piazza at Melrose Arch – only to be told that it was rough because all the mining houses had vacated their offices. Did you ask your First National Bank branch manager why the spacious, well-appointed bureau was suddenly the size of a shoe box, only to discover that you were fortunate that this branch was but one of just a pair – out of 19 branches in the city – to remain open? Did you notice – in the City of Malls – how many shops now sell little more than sneakers, t-shirts and running shorts? How did it feel knowing that all those jobs were going and never coming back – most of them replaced by a machine, or an app on your iPhone?

Where will you go if your favourite malls disappears in toto? I didn't need to go out when staying-in-place in Montclair, New Jersey during the initial outbreak of COVID-19 – and I don't need to leave the house now in Johannesburg as the transmission of SARS-CoV-2 surges, plateaus and then surges once again. I do feel a genuine fealty to many small storeowners (in malls and on the street) who have taken good care of me over the years. However, while pharmacies and doctors are necessities; restaurants, barbershops, gyms and massage therapists are not. Nor are grocery stores. 'Drop it at the door,' said the raven, evermore.

The focus of this chapter is on the evidence for and the consequences of permanent technological unemployment in South Africa.<sup>1</sup> Not only did most pre-2020 assessments

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<sup>1</sup> Accenture Consulting estimates that 5.7 million jobs are at risk of total automation. R Phillips, Y Seedat & S van der Westhuizen 'Creating South Africa's Future Workforce' *Accenture Consulting* (2018), accessed at [https://www.accenture.com/t20180201T173907Z\\_\\_w\\_/za-en/\\_acnmedia/PDF-70/Accenture-Creating-South-Africa-Future-Workforce.pdf?fla=en](https://www.accenture.com/t20180201T173907Z__w_/za-en/_acnmedia/PDF-70/Accenture-Creating-South-Africa-Future-Workforce.pdf?fla=en). The authors employ Acemoglu and Restrepo's 'permanent technological unemployment model' of innovation, productivity, displacement and reinstatement and, more importantly, innovation, productivity, displacement without reinstatement effects:

Job transition is not new. In the pursuit of higher productivity at lower cost options, jobs have for many years been shed. In recent times, many manufacturing and standard business process intensive jobs were outsourced to countries where labour was cheaper. Those jobs rarely made it back to home soil but at least labour in outsource recipient countries benefitted from the employment opportunities created there. Today, the same phenomenon occurs. *But now, the search for labour arbitrage is no longer between physical geographies; today, jobs are lost to the digital world and will, in all probability, never to be done by humans again.* (Emphasis added)

Daniel le Roux at Stellenbosch University estimates that 4.5 million jobs will be lost to automation in the near future. D le Roux 'Many South African Jobs Could Soon Be Automated, and the

conclude that South Africa would lose almost six million jobs over the next seven years (due in large part to automation); the far more chilling accounts deduced a 67% loss of employment across the board within a decade.<sup>2</sup>

The COVID-19 pandemic appears to have accelerated that timeline – though parsing the jobs lost is not straightforward, given:

- an economy already tanking before the pandemic;
- the businesses shuttered permanently due to legal and illegal restrictions imposed in response to the pandemic;
- the effects of a global recession that will diminish demand for certain commodities, services and finished goods for some time;
- changes in spending that reflect great uncertainty about the future;
- the growth of e-commerce spawned by dramatic changes in patterns of social intercourse during and after the pandemic;
- the opportunity for businesses to supplant low-skilled and moderately skilled employees with various forms of automation and artificial intelligence. The robots are not just coming, they are here – like it or not;<sup>3</sup> and
- the loss of jobs creates an even bigger problem. Machines do not consume things. Machines do not buy things. So, while machines can replace human work, they do not drive purchasing power and consumption or GDP as humans do. Humans work. Humans get paid. Humans spend. Humans consume. Society progresses. Humans don't work, don't get paid, can't spend or consume (much). Society regresses.<sup>4</sup>

What South Africa ought to do about the toxic mix of structural unemployment inherited from the apartheid state and perpetuated by a democratic government,<sup>5</sup> and the permanent

Country Isn't Prepared' *The Conversation* (17 July 2018), accessed at <https://theconversation.com/many-south-african-jobs-could-soon-be-automated-and-the-country-isnt-prepared-99689>.

<sup>2</sup> Citi GPS: Global Perspectives and Solutions *Technology at Work v2.0: The Future is Not What It Used to Be* (January 2016) 4, accessed at [https://www.oxfordmartin.ox.ac.uk/downloads/reports/Citi\\_GPS\\_Technology\\_Work\\_2.pdf](https://www.oxfordmartin.ox.ac.uk/downloads/reports/Citi_GPS_Technology_Work_2.pdf).

<sup>3</sup> D West *The Future of Work: Robots, AI and Automation* (2018); M Ford *The Rise of the Robots: Technology and the Threat of a Jobless Future* (2015); M Ford *Architects of Intelligence: The Truth about AI from the People Building It* (2018); A Agrawal, J Gans & A Goldfarb *Prediction Machines: The Simple Economics of Artificial Intelligence* (2018).

<sup>4</sup> Phillips, Y Seedat & S van der Westhuizen 'Creating South Africa's Future Workforce' *Accenture Consulting* (2018), accessed at [https://www.accenture.com/t20180201T173907Z\\_\\_w\\_/za-en/\\_acnmedia/PDF-70/Accenture-Creating-South-Africa-Future-Workforce.pdf?en](https://www.accenture.com/t20180201T173907Z__w_/za-en/_acnmedia/PDF-70/Accenture-Creating-South-Africa-Future-Workforce.pdf?en).

<sup>5</sup> Why did structural unemployment rise from 13% in 1995 rapidly to 30% by the end of the decade (and remain there)? As 2019 Nobel laureate in Economic Sciences, Abhijit Banerjee, concludes in 'Why Has Unemployment Risen in the New South Africa?':

We noted at the outset that changes in the unemployment rate can be viewed as resulting from either a temporary shock or a more permanent structural change. We proceeded by using several nationally representative household surveys to investigate multiple aspects of South African unemployment. On the more aggregate level, we noted that the demand for unskilled labor had fallen and that this was particularly manifested in the agricultural and mining sectors. Concurrent with the decline in the demand for less-skilled labor, there was a large increase in the supply of less skilled labor. Much of this increase was in the form of a large influx of African women into the labor market. The result of the increased supply and decreased demand was, predictably, increased unemployment. We view the massive influx of female labor supply as a structural change, not a temporary shock. There is simply no evidence to suggest that women are likely to exit the labor market in the sort of numbers that

technological unemployment created by advances in automation and AI is a matter taken up in Chapter V. The purpose of this chapter is to establish part of the factual predicate for the proposition that permanent technological unemployment poses an existential threat to South Africa's experiment in inclusive democracy.<sup>6</sup>

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entered any time soon. Similarly, there is little reason to expect that agriculture or mining are likely to become more labor intensive. The fact that mining employment has fallen rather steadily during the recent commodity boom leads us to believe that the decline in mining employment is also a structural shift rather than a transitory shock. Finally, the decline in agricultural employment also strikes us as a structural shift. The South African economy has moved into sectors such as financial services and other service sectors, and agriculture is on the downswing.

A Banerjee, S Galiani, J Levinsohn, Z McLaren & I Woolard 'Why Has Unemployment Risen in the New South Africa?' *MIT Working Paper* (2008), accessed at <https://economics.mit.edu/files/2883>. Nobel Laureates Abhijit Banerjee and Ester Duflo, the doyens of behavioural economics for the poor, no longer see 'temporary structural shocks' to development – they also see permanent blocks to development. A Banerjee & E Duflo 'How Poverty Ends: The Many Paths to Progress – and Why They Might Not Continue' *Foreign Affairs* (January/February 2020). These significant new conclusions are discussed in Chapter V.

<sup>6</sup> This book engages the extractive political arrangements that bedevil South Africa. It does so as it recounts the costs of colonial rule, the apartheid regime and lost opportunities under a post-apartheid democratic government, due to both mismanagement and corruption. However, it takes familiarity with the corruption that has plagued contemporary South Africa as a given, and leaves the telling of the specifics of that sordid tale to others. At the same time, it recognises continuities in the relationship between state and society under apartheid, and under post-apartheid rule. Such continuities were recognised early on. B Freund & V Padayachee 'Post-Apartheid South Africa: The Key Patterns Emerge' 33 (20) *Economic and Political Weekly* (1998) 1173, accessed at <https://www.jstor.org/stable/4406779>:

While it would be unreasonable to pillory the country beyond its just deserts, if one is forced to sum up the most striking features of contemporary South Africa, they would have to include the growing ascendance of a corporate-cum-state black elite with little effective challenge either from below or from the formerly powerful white minority, the relative modesty of social change, the disintegration of Left critiques in favour of a crude materialist and instrumental view of life, the pursuit of economic policies that will perpetuate existing inequalities and power relations even while deracialising [them] and, most strikingly, the failure to find a modus operandi that will break the historic walls of privilege in this society of extreme contrasts to create a real new South African identity.

See also J Hyslop 'Political Corruption: Before and after Apartheid' (2005) 31 *Journal of Southern African Studies* 773, accessed at <https://www.jstor.org/stable/25065046>:

Since South Africa's 1994 political transition, a major feature of the country's new politics has been the centrality of issues of corruption in public controversy. This article aims to analyse how the administrative and political legacies brought to the present by both the old South African state structures and the new political leadership produce varying types of corruption ... [I argue] that most writing on South African corruption has failed to use the analytically necessary distinctions between concepts of rent-seeking behaviour, patron-client relationships and corruption as such ... [I then offer] a historical overview of corruption questions in South Africa ... [My overview shows] ... that there was a high degree of variability in the levels and nature of rent-seeking activities in the state during the century of white domination in Southern Africa. The legacies of forms of rent seeking, patronage and corruption existing within the former white state, the Bantustans, and within the liberation movement itself have all combined to affect the politics of the post-apartheid state.

A Beresford 'Power, Patronage, and Gatekeeper Politics in South Africa' (2015) 114 *African Affairs* 226, accessed at <https://doi.org/10.1093/afraf/adu083>:

[This article] examines the rise of gatekeeper politics within the ANC ... [identifies] the symptoms and consequences of gatekeeper politics, including the growth of patronage networks, crony capitalism, and bitter factional struggles within the party ... Gatekeeper politics should be viewed within a broader spectrum of patronage politics evident elsewhere in the world ... Political leaders who occupy positions of authority in the party or public service act as gatekeepers by regulating access to the resources and

To establish this factual predicate, this chapter first describes the economic landscape that pre-existed this age of accelerated automation. Thereafter, the chapter looks at how permanent technological unemployment (along with the pernicious historical legacy of structural unemployment) has disrupted and will continue to disrupt each major sector of the South African economy.

### A. The Road from Serfdom – South African History and the Absence of a Social Contract

One can't ignore history, even as we contemplate the acceleration of change in the present and near future. Our Constitution, while necessary as scaffolding for the delineation of institutions required for an entirely new constitutional democracy based upon self-governance and popular sovereignty, could never plausibly be conceived as self-enacting. Its aspirations require collective action – politics, plain and simple. To reiterate: the Constitution is neither transformative nor reactionary. It simply creates space for political, social and economic contestation within an anticolonial-post-apartheid-globalised landscape.<sup>7</sup>

Any dominant pre-constitutional storyline of southern Africa must begin in the middle of the last millennium with the arrival of the first outpost of the Dutch East India Company and record the effects from the initial depredations of colonial settlement to the final Nazification of 'the country' under colonial rule and apartheid in the 19th and 20th centuries.<sup>8</sup> A weaker, second theme for the purposes of understanding the ongoing effects of colonialism and apartheid recognises the autonomy of African communities prior to white colonial settlement and the persistent organised resistance and self-government of persons of colour throughout the late 19th century and the entire 20th century.<sup>9</sup> But that resistance, while necessary for a partial revolution, does not help us understand South Africa's current economic landscape and its ability (or inability) to withstand the technological disruption caused by automation, artificial intelligence and new business models.

Even if all nations are bathed in blood, South African history is particularly brutal. However, for my limited purposes, the industrial history in this book takes its departure point from 1870 and the geographical space that less than a half-century later officially became known as South Africa.<sup>10</sup>

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opportunities that they control. A volatile politics of inclusion and exclusion emerges and provokes bitter factional struggles within the ANC as rival elites compete for power. The rise of gatekeeper politics undermines both the organizational integrity of the ANC and its capacity to deliver on its electoral mandate.

<sup>7</sup> S Woolman 'Understanding South Africa's Aspirational Constitution as Scaffolding' (2015/2016) 60 *New York Law School Law Review* 401.

<sup>8</sup> For an in-depth account of South African history from pre-history up until 1999, see R Beck *The History of South Africa* (2nd edition, 2013).

<sup>9</sup> T Ngcukaitobi *The Land is Ours: Black Lawyers and the Birth of Constitutionalism in South Africa* (2018); S Woolman & F Cachalia 'A Thin Theory of Democratic Politics Suited to South Africa' (SAIFAC Conference, Colombian/South African Exchange, 4 December 2018, draft on file with authors).

<sup>10</sup> R Beck *The History of South Africa* (2nd edition, 2013).

Immediately prior to 1867, this southern African space encompassed several African kingdoms, two English colonies and two self-governing Boer Republics.<sup>11</sup> Matters changed rapidly with the discovery of diamonds in the Cape Colony at this time.<sup>12</sup> While the intensity of British colonisation accelerated with this discovery, the industrialisation of South Africa escalated with the finding of huge stores of gold in 1886. Because the British had been on the gold standard since 1821, the British Empire and gold played an outsized role in a nascent international monetary system.<sup>13</sup> In *less than a decade* after the discovery of gold in South Africa, 39 nations had adopted the gold standard.<sup>14</sup> British ‘control’ of South African gold – and thus control of the international monetary system – became the primary driver of England’s particularly vicious and pitiless colonial policies from 1886 until the end of the First World War.<sup>15</sup>

After the South African War of 1899–1902, in which England emerged victorious, the English and the Afrikaners agreed to divide the spoils by creating a four province Union in 1910.<sup>16</sup> The South Africa Act, 1909, and the subsequent nefarious Natives Land Act, 1913, ensured that the black majority in South Africa would not and could not contest white supremacy in either the political domain or the economic realm.<sup>17</sup> The Natives Land Act prevented the black majority, in law, from any meaningful land ownership.<sup>18</sup> The Group Areas Act<sup>19</sup> – followed by the Population Registration Act,<sup>20</sup> the Abolition of Passes and Co-ordination of Documents Act,<sup>21</sup> and the Promotion of Bantu Self-government Act<sup>22</sup>

<sup>11</sup> *ibid.*

<sup>12</sup> P Stewart ‘The Centrality of Labour Time in South African Gold Mining since 1886’ (2016) 57 *Labor History* 170.

<sup>13</sup> T Bayoumi & B Eichengreen ‘The Stability of the Gold Standard and the Evolution of the International Monetary System’ (1995) *IMF Working Paper* 95; A Pančur ‘The Importance of Gold in the Establishment and Operation of the International Monetary System before the First World War’ (2004) 50 *Our Economy* 17.

<sup>14</sup> *ibid.*

<sup>15</sup> R Alley *Gold & Empire: The Bank of England and South Africa’s Gold Producers, 1886–1926* (1994). (Alley’s brilliant descriptive account helps to explain why we are where we are.)

<sup>16</sup> They celebrated this unholy union with much fanfare. P Merrington ‘Masques, Monuments and Masons: The 1910 Pageant of the Union of South Africa’ (1997) 49(1) *Theatre Journal* 1.

<sup>17</sup> C Walker ‘Critical Reflections on South Africa’s 1913 Natives Land Act And Its Legacies: Introduction’ (2014) 40 *Journal of Southern African Studies* 655, 655–657.

<sup>18</sup> The Act specified that black Africans – a substantial majority – were confined to 7% of South Africa’s land. ‘The Natives Land Act of 1913’, *South African History Online*, accessed at <https://www.sahistory.org.za/topic/natives-land-act-1913>.

<sup>19</sup> Act 46 of 1959. H Klug ‘Self-Determination and the Struggle against Apartheid’ (1990) 8 *Wisconsin International Law Journal* 251, 294–295.

<sup>20</sup> Act 30 of 1950. Interestingly, the definition of European in colonial Natal was constructed primarily around the threefold distinction between indigenous Africans, indentured Indians, and other members of colonial society. For example, prison regulations classified prisoners into three groups, Africans, Indians and Europeans, but the definition of Europeans was unusual in that it included ‘all persons of European descent, Eurasians ... American Negroes, French Creoles and West Indians’. A Sachs *Justice in South Africa* (1973) 89.

<sup>21</sup> Act 67 of 1952.

<sup>22</sup> If land dispossession wasn’t enough, the Crown’s reversal of its commitment to the abolition of slavery in 1836 became patently clear with the Urban Areas Act of 1923. The Act introduced the second and third hallmarks of apartheid – ‘influx control’ and ‘pass laws’. White authorities, in collaboration with a nefarious crew of chiefs and criminals, orchestrated the creation of an initial pool of 200 000 young, black men to

– divested the majority of the population of (almost) all vestiges of control over their political, economic and social life. The black African majority was reduced, once again, through law after law, to the status of slaves or serfs. This long process of dispossession, dehumanisation and deprivation of black South Africans continued through the *de jure* demise of apartheid and remains a *de facto* condition of contemporary South African life in 2020.<sup>23</sup>

This history enables us to understand, in large part, why South Africa did not reap the economic benefits of the post-apartheid era. What happened after 1994 and to our constitutional emancipation? Something startling, if one looks at the shape of South Africa's economic topography.<sup>24</sup>

To prove the point above, when my friend Sanele Sibanda mapped the then current geographical spread of wealth of the nation in 2009 on to the geographical spread of wealth of the nation in 1994, a disturbing picture appeared. Nothing much had changed. The borders of the Bantustans eradicated in 1994 popped up as borders of 'informal bantustans' on the geographic chart of wealth distribution in 2009.<sup>25</sup> Over the subsequent decade, 2009–2019, the map remained depressingly stable.

That should come as no surprise, given the ongoing marginalisation that continued after 1994. A list of these deficits and deficiencies would run from the consequences of execrable primary and secondary school education,<sup>26</sup> to the absence of adequate state

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provide cheap labour for the mines. But the same provisions of the Urban Areas Act could be applied across the board when it came to the exclusion of black South Africans from any form of labour (or business). A century after proclaiming black emancipation throughout the realm, the British Crown – through its surrogates in South Africa – had placed black South Africans in far harsher conditions of slavery, servitude and forced labour than the majority had heretofore experienced. Apartheid, as a crime against humanity, had effectively and officially (if not doctrinally) arrived.

<sup>23</sup> S Sibanda 'Not Yet Uhuru' – *The Usurpation of the Liberation Aspirations of South Africa's Masses by a Commitment to Liberal Constitutional Democracy* (PhD thesis, University of the Witwatersrand, 2019); F Cachalia 'Democratic Constitutionalism in the Time of the Postcolony: Beyond Triumph and Betrayal' (2018) 34 *South African Journal on Human Rights* 375, accessed at <https://doi.org/10.1080/02587203.2018.1543838>. Sibanda and Cachalia don't disagree so much on the facts on the ground, as they do on whether one ought to identify the Constitution as the primary cause of the current winter of our discontent. That *de jure* apartheid was supplanted by what looks to be *de facto* apartheid is a point taken up elsewhere in this piece and far more astutely by others. One cannot however overlook demonstrable success over 26 years of (imperfect) democratic rule and judicial intervention. For a piece that demonstrates how political challenges to the old, but still extant and evergreen, order have also been blocked by new extractive and elitist political and economic institutions, see T Madlingozi 'Post-Apartheid Social Movements and Legal Mobilization' in M Langford et al. (eds) *Socio-Economic Rights in South Africa: Symbols or Substance* (2014) 92. For other pieces right on the politics, but 'not so much' on the Constitution, see S Sibanda 'Not-Purpose Made! Transformative Constitutionalism, Post-Independence Constitutionalism and the Struggle to Eradicate Poverty' (2011) 22 *Stellenbosch Law Review* 482; S Sibanda 'Not Quite a Rejoinder: Some Thoughts and Reflections on Michelman's Liberal Constitutionalism, Property Rights and the Assault on Poverty' (2013) 24 *Stellenbosch Law Review* 329.

<sup>24</sup> S Du Plessis & B Smit 'Economic Growth in South Africa since 1994' (2006) *Stellenbosch Economic Working Papers* 1/2006.

<sup>25</sup> 'Poverty Mapping in South Africa' *StatsSA* (2018) Report No. 03-10-00, accessed at <http://www.statssa.gov.za/publications/Report%2003-10-00/Report%2003-10-002011.pdf>; J Tshela & O Makhuda 'Governance of Land in South Africa and the Fallacious Bantustan Urbanisation' (2019) 16(1) *Bangladesh e-Journal of Sociology* 168.

<sup>26</sup> C Gwatirera 'Access to Higher Education in South Africa' in S Billingham (ed) *Access to Success and Social*

administration,<sup>27</sup> to the structural impediments for employment in both the informal and formal sectors of the economy,<sup>28, 29</sup> to the lack of skills and accumulated wealth necessary for the majority of South Africans to take advantage of their new-found freedom.<sup>30</sup>

Some commentators have been pressing for a Keynesian model of intervention since 1994.<sup>31</sup> This history may explain why these interventions have not been successful.

Prior to 1994, South Africa as a sovereign entity did not exist. Of the 39 million residents in 1994,<sup>32</sup> the vast majority of the country's 29.5 million black (African<sup>33</sup>) residents but not citizens<sup>34</sup> had largely been consigned to Bantustans that made up a mere 13% of the land – most of it non-arable, without mineral wealth and lacking basic infrastructure.<sup>35</sup> Four million Indians and so-called coloureds, while not so relegated, found themselves living on the very periphery of South African society, dispatched to impoverished zones of population control.<sup>36</sup>

A democracy of, by and for all the people of South Africa did not spring into being once all the votes from 27 April 1994 were tallied. National and provincial legislatures and executive offices needed to be filled, and the apparatchiks of the apartheid state had to be replaced with a more representative and cooperative cohort of governing party bureaucrats. No mean feat? Impossible. Despite the creation of nine new provinces in 1994, many of them (carved out of Bantustans) lacked the operative administrative structures and personnel to carry out their mandate.<sup>37</sup> That's why the national government has, at

*Mobility through Higher Education: A Curate's Egg?* (2018) 35.

- <sup>27</sup> G Fulufhelo & G. Phago Kedibone 'The Prevalence of Public Sector Corruption in South Africa: Relevance of the Social Value Ecosystem' (2018) 32(2) *Loyola Journal of Social Sciences* 45.
- <sup>28</sup> D Mahadea & R Simson 'The Challenge of Low Employment Economic Growth in South Africa: 1994-2008' (2010) 13(4) *South African Journal of Economic and Management Sciences* 391, 398–401.
- <sup>29</sup> S Msomi 'New Forum Mooted to Boost Job Creation' *Sunday Times* (28 May 2000) 1.
- <sup>30</sup> A Zoch 'Life Chances and Class: Estimating Inequality of Opportunity for Children and Adolescents in South Africa' (2015) 32(1) *Development Southern Africa* 57.
- <sup>31</sup> No clear consensus exists in academia with regard to the virtues of a Keynesian approach to growth. Compare G Chipaumire, H Ngirande, M Method & Y Ruswa 'The Impact of Government Spending on Economic Growth: Case South Africa' (2014) 5(1) *Mediterranean Journal of Social Sciences* 109 with T Habanabakiza & P Muzindutsi 'Analysis of the Keynesian Theory of Employment and Sectoral Job Creation: The Case of the South African Manufacturing Sector' (2018) 18(1) *Folia Oeconomica Stetinensia* 123.
- <sup>32</sup> 'South African Statistics 2000' *StatsSA* (2000) 1.1, accessed at <http://www.statssa.gov.za/publications/SAStatistics/SAStatistics2000.pdf>.
- <sup>33</sup> The 'coloured' category refers to people of mixed African and European ancestry in terms of the system of racial classification used by the apartheid government. Its usefulness is therefore hotly contested.
- <sup>34</sup> *ibid.*
- <sup>35</sup> Promotion of Bantu Self-Government Act 46 of 1959. T Davenport 'South Africa: A Modern History' (1977) 268; 'The Homelands' *South African History Online* (2019), accessed at <https://www.sahistory.org.za/article/homelands>.
- <sup>36</sup> The process of creating these zones of population control was violent and traumatic. J Popke 'Violence and Memory in the Reconstruction of South Africa's Cato Manor' (2000) 31(2) *Growth and Change* 235, 239–243.
- <sup>37</sup> T Madlingozi 'On Settler Colonialism and Post-Conquest "Constitutionness": The Decolonising Constitutional Vision of African Nationalists of Azania/South Africa', accessed at [https://www.academia.edu/33747352/On\\_Settler\\_Colonialism\\_and\\_Post-Conquest\\_Constitutionness\\_The\\_Decolonising\\_Constitutional\\_Vision\\_of\\_African\\_Nationalists\\_of\\_Azania\\_South\\_Africa](https://www.academia.edu/33747352/On_Settler_Colonialism_and_Post-Conquest_Constitutionness_The_Decolonising_Constitutional_Vision_of_African_Nationalists_of_Azania_South_Africa).

various points, had to declare – as constitutionally mandated – that it was taking over the administration of several provinces.<sup>38</sup>

As a member of the Office of the President would tell me almost 20 years later, South Africa has a 15% problem. Meaning, in short: only 15% of the bureaucracy has the capacity to discharge the responsibilities of day-to-day governance efficiently or effectively.

That assessment should not be confused with the common canard that the public sector is bloated.<sup>39</sup> South Africa spends 14% of its GDP on the public sector, while your average OECD nation spends roughly the same at 10% of its GDP. Two reasons exist to think that it's bloated. It prevents expenditure on other pressing social problems. The governing alliance member COSATU has historically insisted upon increasingly greater wage increases for its public sector members: that budgetary allocation prevents the government from generating allocations for other pressing social problems. Though it may not be the most 'productive' spend, it has had one significant benefit.

One cannot deny that state employment has been successfully used as a job creation programme.<sup>40</sup> (The apartheid state and prior colonial structures functioned no differently.) This use of state resources facilitated the creation and the maintenance of a black middle class and a larger black working class.<sup>41</sup>

In addition, the adversarial stance often taken by the state toward NGOs meant that it could not rely (and often refused to rely) upon intermediate non-state organisations to fill gaps in governance.<sup>42</sup> Moreover, the antagonistic stance taken toward NGOs and CSOs means that we are left that with an extremely thin civil society that neither works as a buffer between state and citizen, nor facilitates the kinds of social and political movements that might shape a more inclusive, egalitarian, playing field.<sup>43</sup>

<sup>38</sup> N Qwabe 'Minister Steps In, Takes over Mental Health in the Eastern Cape' *DispatchLive* (10 December 2018), accessed at <https://www.dispatchlive.co.za/news/2018-12-10-minister-steps-in-takes-over-mental-health-in-the-eastern-cape/>; Z George & A Carlisle 'The 15 Eastern Cape Municipalities Nhlanhla Nene has Lost Patience Over' *Business Day* (10 May 2018), accessed at <https://www.businesslive.co.za/bd/national/2018-05-10-the-15-eastern-cape-municipalities-nhlanhla-nene-has-lost-patience-over/>; R Molefe 'VBS: 7 Limpopo Municipalities Could Be Placed Under Administration' *Mail & Guardian* (15 November 2018), accessed at <https://mg.co.za/article/2018-11-15-vbs-7-limpopo-municipalities-could-be-placed-under-administration>.

<sup>39</sup> T Head 'Revealed: Bloated Public Sector Wage Bill Tops R500 Billion' *The South African* (20 January 2019), accessed at <https://www.thesouthafrican.com/public-sector-wage-bill-south-africa/>.

<sup>40</sup> H Bhorat, K Naidoo & K Pillay 'South Africa's Civil Servants are the Country's New Labour Elite' *The Conversation* (19 February 2016), accessed at <https://theconversation.com/south-africas-civil-servants-are-the-countrys-new-labour-elite-54269>; D Toerien 'Economic Value Addition, Employment, and Enterprise Profiles of Local Authorities in the Free State' (2015) 1 *Cogent Social Sciences* 1, 14–15, 18–19.

<sup>41</sup> Consumer Market Insights 'An Increasing South African Middle Class' (2006) 11(8) *Market: Africa/Middle East* 3; R Donaldson, T Mehlokhulu, D Darkey, M Dyssel & P Siyongwana 'Relocation: To Be or Not to Be a Black Diamond in a South African Township?' (2013) 39 *Habitat International* 114; N Mashaba & M Wiese 'Black Middle Class Township Shoppers: A Shopper Typology' (2016) 26(1) *The International Review of Retail, Distribution and Consumer Research* 35, 37–38; 'The Rise of the Buppies' *The Economist* (2007), accessed at <https://www.economist.com/middle-east-and-africa/2007/11/01/the-rise-of-the-buppies>.

<sup>42</sup> A Habib 'State-Civil Society Relations in Post-Apartheid South Africa' 72(2) *Social Research* (2005) 671, accessed at <https://www.jstor.org/stable/pdf/40971786.pdf>.

<sup>43</sup> S Friedman & M Reitzes 'Democratisation or Bureaucratisation? Civil Society, the Public Sphere and the State in Post-Apartheid South Africa' (1996) 29 *Transformation* 55. See also L Leonard 'Characterising Civil Society and Its Challenges in Post-Apartheid South Africa' (2014) 40 *Social Dynamics* 371. Leonard contends that:

If South Africa had a private sector that would absorb public sector workers, then the state could lay them off and deploy the savings in wages (a staggering 34% of the overall budget) toward the production of other essential public goods.<sup>44</sup> That the private sector, has not and would not absorb them,<sup>45</sup> reflects a quintessential failure of the privileged to atone for the past and an inability to look beyond quarterly or annual horizons. However, this undeniable and reprehensible failure to atone and to transform by the private sector constitutes only one explanation for the failure to make a dent in high levels of structural unemployment. Labour rigidities held in place by the governing alliance, and especially the presence of labour in the ruling alliance, made riding a global wave (in emerging economies) from low-wage manufacturing in the 1990s to higher-wage paying diverse economies in the 2010s utterly impossible.<sup>46</sup> That the government has literally taken to begging business not to retrench workers doesn't mean that it can prevent them from doing so.<sup>47</sup>

One worker often carries twenty family members.<sup>48</sup> What will happen when one worker must carry thirty or more persons without adequate social systems of support? The inadequate state response to the COVID-19 pandemic provides a partial answer. Initially, the state did little more than provide the minimal degree of support necessary for the 50% of South Africans living at the food poverty line. Only after crushing the economy by failing to adhere to its own fiscal and public health policies, did the state respond to absurd levels of unemployment by providing grants (for six months) to jobless citizens. These relief grants, as the South African Medical Association has noted, are unlikely to be replicated because the government coffers are empty, and a majority of South Africans must work in

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[s]ince the transition ... established civil society organisations ... have become well-resourced and ... developed collaborative relationships with the state and industry, which has eroded their accountability to and support from the marginalised communities they claim to serve. Can such organisations then claim to be part of an 'authentic' civil society striving for inclusive development? ... [Leonard argues that] civil society has not effectively engaged with the grassroots to project their concerns about macroeconomic risks, largely due to integration into government/donor institutions. Fragmentation within the grassroots arena has also limited coherent actions against dominant groups.

<sup>44</sup> The government's wage bill accounts for the *largest portion* of the national budget at 34%. 'The Rise and Rise of Public Servants Pay in South Africa' *BusinessTech* (31 October 2019), accessed at <https://businesstech.co.za/news/finance/350391/the-rise-and-rise-of-public-servants-pay-in-south-africa/>.

<sup>45</sup> L Peyper 'Concern over Poor Private Sector Investment in SA' *Fin24* (8 March 2017), accessed at <https://www.fin24.com/Economy/concern-over-poor-private-sector-investment-in-sa-20170308-2>; M Stampini, R Leung, S Diarra & L Pla 'How Large is the Private Sector in Africa? Evidence from National Accounts and Labour Markets' (2013) 81 *South African Journal of Economics* 140, 154–156.

<sup>46</sup> J Fedderke 'The Cost of Rigidity: The Case of the South African Labour Market' (2012) 54 *Comparative Economic Studies* 809; M Rama and A Forteza *Labor Market Rigidity and the Success of Economic Reforms across More than 100 Countries* (1999). Rama and Forteza's book shows that while minimum wages and mandatory benefits do not hurt growth, 'the relative size of organized labour (*in government*) appears to matter' and has a negative effect on economic performance. 'Labour market rigidity', they conclude, 'seems to be relevant more for political reasons' – and who stands to lose from changes to regulatory frameworks – 'than for economic reasons.'

<sup>47</sup> T Mahlankoa 'Cyril Ramaphosa Implores Business to Halt Job Cuts' *Business Day* (18 September 2018), accessed at <https://www.businesslive.co.za/bd/national/2018-09-18-cyril-ramaphosa-implores-business-to-halt-job-cuts/>.

<sup>48</sup> H Bhoorat, K Naidoo, M Oosthuizen & K Pillay 'Demographic, Employments and Wage Trends in South Africa' *Brookings Institute/United Nations Paper* (June 2016).

conditions that preclude social distancing – at home, while travelling to work, and at work itself – or *face starvation*. For the same reasons, SAMA concluded that a real lockdown to prevent further transmission of the virus – whatever its degree of virulence – is simply impossible.<sup>49</sup> Significant problems with delivery of these novel grants – as surveyed in the Prologue – should not discourage future attempts to get this Basic Income Scheme right. As the conclusion notes, the extension of such benefits for the foreseeable future may constitute a major step toward rewriting the social contract and creating a viable political economy.

## B. The Road Back to Serfdom – The Inability of South Africa’s Democracy to Respond to the Demands of the Present or the Future

In the penultimate 2019 draft of this work, I sketched a fairly bleak picture of South Africa’s present and its potentially dystopian future. I noted that while official unemployment stood at 30%,<sup>50</sup> the real rate was closer to 45%.<sup>51</sup> In addition, the mismatch between negative and limited growth,<sup>52</sup> a function of a 19th century plantation economy gone to seed, poor macroeconomic planning since 1994 and the increasing numbers of labour market entrants<sup>53</sup> would only exacerbate those numbers over time. The COVID-19 pandemic ought to be viewed as an accelerant of large-scale unemployment – which now ‘officially’ weighs in at 50%. However, neither structural impediments nor COVID-19 shakeouts explain how large-scale permanent technological unemployment operates in South Africa.

The acceleration of permanent technological unemployment (both before and after the COVID-19 pandemic occurred) means that most unskilled persons – the vast majority of people aged between 15 and 34<sup>54</sup> – are unlikely to ever enter the workplace at all. Is South Africa’s political economy ripe for social implosion?<sup>55</sup> That it hasn’t happened here, in the same manner in which it has occurred in similarly situated states, does not mean that it won’t. After all, a prior social implosion led to a democratic South Africa. Fairly widespread views regarding the need for a social implosion had taken hold long before the COVID-19 pandemic arrived. Lay people and academics alike expressed the opinion that making the country ‘ungovernable’ was the only way to bring about meaningful change in what remains a (post)apartheid state or neo-apartheid state.<sup>56</sup>

<sup>49</sup> ‘SA Medical Association: Harder Lockdown Would be Counterproductive’ *EWNNews* (9 January 2021), accessed at <https://ewn.co.za/2021/01/09/harder-lockdown-would-be-counterproductive-says-sa-medical-association>.

<sup>50</sup> ‘South Africa Unemployment Rate’ *Trading Economics* (2019), accessed at <https://tradingeconomics.com/south-africa/unemployment-rate>.

<sup>51</sup> See [www.tradingeconomics.com](http://www.tradingeconomics.com) (October 2015).

<sup>52</sup> ‘Economy Edges up by 0.8% in 2018’ *StatsSA* (5 March 2019), accessed at <http://www.statssa.gov.za/?p=11969>.

<sup>53</sup> L Festus, A Kasongo, M Moses & D Yu ‘The South African Labour Market, 1995-2005’ (2016) 33(5) *Development Southern Africa* 579 at 588-91.

<sup>54</sup> ‘Big Shock in Number of Skilled Jobs in South Africa’ *BusinessTech* (29 June 2015), accessed at <https://businesstech.co.za/news/general/91902/big-shock-in-number-of-skilled-jobs-in-south-africa/>.

<sup>55</sup> S Woolman ‘Is Xenophobia the Right Legal Term of Art? A Freudian and Kleinian Response to Loren Landau on the Violence in South African Townships’ (2011) 21 *Stellenbosch Law Review* 285.

<sup>56</sup> ‘(Post)apartheid’ or ‘neo-apartheid’ state reflects the fairly accurate assessment that while the formal structures of the apartheid state have been dismantled, the substantive relationships between state and society, and socio-economic relationships between the citizens have not fundamentally changed. T Madlingozi ‘Social

While trying to remain true to Arendt's initial insight that understanding the present moment means forestalling soothsaying, the remainder of this chapter identifies the conditions that might lead to large-scale permanent technological unemployment and the sectors most likely to experience such shocks. This book's conclusion then quite consciously limits its horizon to 'doing the best we can' once we have weathered these shocks and started to rewrite the social contract so that all South Africans possess the minimal material and immaterial means required to live a dignified existence. The epilogue places a conceptual bet on making good the conclusion's promise. Spoiler alert: Ten cents on the dollar says that we won't.

*Structural impediments: South Africa's past and present extractive, non-inclusive political and economic institutions*

It's easy enough to reel off a host of immediate, newsworthy structural impediments.

At the end of 2019, South Africa's debt ratio stood at 62.2%. That's placed it higher than Turkey's debt ratio of 58% – a country deemed to be on the verge of default in 2019.<sup>57</sup> Analysts had previously predicted the debt ratio would peak at just below 60% by 2023/24,<sup>58</sup> long after the last rating agency to maintain South Africa's positive investment grade, Moody's, had sent its credit rating to junk.<sup>59</sup> As of May 2020, analysts expected the debt ratio to reach 70%, if not far higher, by the end of the end of 2020.<sup>60</sup>

There is no clear end to the haemorrhaging. While Finance Minister Tito Mboweni attempted to calm concerned stakeholders during his revised, supplementary 2020 budget speech in June 2020,<sup>61</sup> his candour regarding the 2020/2021 budget deficit had the debt ratio reaching 83% of GDP by February 2021.<sup>62</sup> Moreover, the South African government has lost its ability to convince potential investors and the agencies that grade its sovereign instruments that the polity is creditworthy. Subsequent to its downgrade of South Africa to junk, Moody's issued a comment noting the ballooning debt ratio. It concluded that the Minister's belief that it could be stabilized by 2023 was unwarranted.<sup>63</sup> Moody's

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Justice in a Time of Neo-Apartheid Constitutionalism: Critiquing the Anti-Black Economy of Recognition, Incorporation and Distribution' (2017) 28 *Stellenbosch Law Review* 123.

- <sup>57</sup> T Ozsoy & H Govind 'Turkey's Rating Cut Deeper Into Junk by Moody's on Default Risk' *Bloomberg News* (14 June 2019), accessed at <https://www.bloomberg.com/news/articles/2019-06-14/turkey-s-rating-cut-deeper-into-junk-by-moody-s-on-default-risk>.
- <sup>58</sup> K Koranteng 'Opinion: SA's Debt-to-GDP Ratio is Uncomfortable' *Business Report* (15 February 2019), accessed at <https://www.iol.co.za/business-report/economy/opinion-sas-debt-to-gdp-ratio-is-uncomfortable-19319117>.
- <sup>59</sup> In early 2019, Moody's was relatively quiet. L Donnelly 'Moody's Stays Mum on SA Status' *Mail & Guardian* (30 March 2019), accessed at <https://mg.co.za/article/2019-03-30-moodys-stays-mum-on-sa-status>. However, later in 2019, Moody's outlook had shifted to negative, and the next rounds of ratings brought about two successive a downgrades from investment grade status to junk, and from junk, to more junk.
- <sup>60</sup> 'South Africa Government Debt to GDP | 2020-2022 Forecast' *Trading Economics* (28 May 2020), accessed at <https://tradingeconomics.com/south-africa/government-debt-to-gdp>.
- <sup>61</sup> Finance Minister Tito Mboweni tabled his supplementary budget on Wednesday, 24 June 2020.
- <sup>62</sup> By November 2020, our Finance Minister conceded that debt could reach 93% before long, but that the sale of government bonds would prevent default.
- <sup>63</sup> Moody's 'Sharp Contraction in GDP and Revenue Leads to Debt Spike; Stabilisation

analysis flowed from a well-justified assessment that ‘South Africa’s recent history on this score hardly inspires confidence’.<sup>64</sup> Not surprisingly, Moody’s and Fitch subsequently downgraded South Africa’s rating again, later in 2020, based largely upon the state’s failure to act aggressively and coherently with respect to the fallout from COVID-19.

Junk status and an increasingly high debt ratio mean that South Africa will find borrowing money to fund public projects more difficult and expensive.<sup>65</sup> Thus while South Africa maintains the capacity to issue bonds and to borrow for both relief and capital intense public works projects *from lenders of last resort*, the spectre of default still hangs in the air like a sword of Damocles.<sup>66</sup>

One sign of the straightened circumstances that the South African government is under occurred in early 2018. It accepted (a relatively small) R33 billion from China in order to keep Eskom solvent and operative.<sup>67</sup> That ‘loan’ from China may turn out to be a poisoned chalice, as it has been elsewhere.<sup>68</sup> However, it’s of greater import that even as the state rushed to reopen the economy as the COVID-19 infection rates sped past 25% of adults, it cannot find the domestic resources necessary to ensure that both businesses and households are able to keep the lights on. As the state moved to Level 2, at the beginning of August 2020, the lights again started to flicker.<sup>69</sup>

The government, at the time of writing in December 2020, isn’t just kicking this particularly big can down the road.<sup>70</sup> It allowed Eskom to shut down the country in

by 2023 Unlikely’ (25 June 2020), accessed at [https://www.moody.com/credit-ratings/South-Africa-Government-of-credit-rating-686830?stop\\_mobi=yes#](https://www.moody.com/credit-ratings/South-Africa-Government-of-credit-rating-686830?stop_mobi=yes#).

<sup>64</sup> E Stoddard ‘Moody’s Casts Doubts on South Africa’s Bid To Stabilise Debt’ *Daily Maverick* (28 June 2020), accessed at <https://www.dailymaverick.co.za/article/2020-06-28-moodys-casts-doubts-on-south-africas-bid-to-stabilise-debt/>.

<sup>65</sup> A Winning ‘S&P Keeps South Africa Credit Ratings Below Investment Grade’ *MoneyWeb* (24 November 2018), accessed at <https://www.moneyweb.co.za/news/south-africa/sp-keeps-south-africa-credit-ratings-below-investment-grade/>.

<sup>66</sup> L Buthelezi ‘SA Financial System Under Stress, Headed For “Extraordinary Shocks” – Reserve Bank’ *Fin24* (28 May 2020), accessed at <https://www.fin24.com/Companies/Financial-Services/sa-financial-system-under-stress-headed-for-extraordinary-shocks-reserve-bank-20200528-2>:

[While] Reserve Bank Governor Lesjea Kganyago said that South African financial institutions have put substantial buffers in place to absorb the Covid-19 shock, and are in a much better position than they were confronting the 2009 global financial crisis ... he simultaneously noted that ‘... the financial stability risks are elevated and the outlook is challenging. Just as the country has probably not seen the peak of Covid-19 infections yet, so the economic impact of the virus is also in its early stages. Much remains unclear about the nature and duration of the economic downturn we are ... experiencing.

<sup>67</sup> M Turner ‘Eskom Gets Chinese Loan, Thought to Consider LM’ *Global Investor* 13 August 2018.

<sup>68</sup> G Fridell ‘Politicising Debt and Development: Activist Voices on Social Justice in the New Millennium’ (2013) 34 *Third World Quarterly* 726.

<sup>69</sup> A system of scheduled brownouts – dubbed ‘loadshedding’ – has been adopted (since 2007) to plug the gaps, and continues unabated. C Monyei & A Adewumi ‘Demand Side Management Potentials for Mitigating Energy Poverty in South Africa’ (2017) 111 *Energy Policy* 298, 299, 308. On the spell of loadshedding in early 2019, see R Nqola ‘Mozambique Cyclone to Blame for Stage 4 Loadshedding, says Eskom’ *Eyewitness News* (16 March 2019), accessed at <https://ewn.co.za/2019/03/16/mozambique-cyclone-to-blame-for-stage-4-load-shedding-says-eskom>.

<sup>70</sup> R Mahlaka ‘Mboweni’s Amended Strategy Document on Reforms Kicks the Eskom Debt Question Down The Road’ *Business Maverick* (1 November 2019), accessed at <https://www.dailymaverick.co.za/>

December 2019 by raising loadshedding to a previously unheard of Level 6.<sup>71</sup> In early 2020, Eskom raised the volume to a truly debilitating Level 8. One of the absurd ironies of the limited five-week COVID-19 lockdown was the radically diminished demand for electricity, and a brief hiatus in loadshedding.

As for the proposed ‘stimulus package’, it consists of moving around money in the current budget to rebuild crumbling infrastructure and thereby create a few new jobs. It’s not genuinely priming the pump, as any optimistic and progressive Keynesian might desire.<sup>72</sup> It’s a budget merely trying to keep South Africa and South Africans afloat.<sup>73</sup>

### *Post-apartheid South Africa’s neo-apartheid economy*

The biggest impediment to growth remains the ongoing depredations of informal apartheid. A basic education system that requires significantly more investment to serve

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article/2019-11-01-mbowenis-amended-strategy-document-on-reforms-kicks-the-eskom-debt-question-down-the-road/.

<sup>71</sup> ‘Eskom’s credit rating cut deeper into junk’ *Polity* (1 November 2019), accessed at <https://www.polity.org.za/article/eskoms-credit-rating-cut-deeper-into-junk-2019-10-01>. Eskom’s stand-alone credit profile was downgraded by Fitch, from ccc to ccc-, based upon the SOE’s inability to repay debt without greater government support and ongoing mismanagement.

<sup>72</sup> M Liverani ‘Futility of Kick-Start without “Priming the Pump”’ (2010) 48 *Law Society Journal* 82; P Tcherneva ‘Reorienting Fiscal Policy: A Bottom-Up Approach’ (2014) 37 *Journal of Post-Keynesian Economics* 43.

<sup>73</sup> For a response to the 2018 budget speech, see N Jordaan ‘Budget 2018: A Speech to Remember ... For All The Wrong Reasons’ *Times Live* (22 February 2018), accessed at <https://www.timeslive.co.za/politics/2018-02-22-budget-2018-a-speech-to-remember--for-all-the-wrong-reasons/>. It’s also worth considering the degree to which a New Deal approach would reap immediate benefits. Until 1937, the Supreme Court in the US repeatedly struck down New Deal legislation. L Kalman ‘The Constitution, the Supreme Court and the New Deal’ (2005) 110 *American Historical Review* 1052. Ultimately, what lifted the US economy out of the Depression and into a future of sustained growth was World War II, multiple income families and a consequent expansion of public benefits through both the New Deal (and subsequent initiatives like the GI Bill), as well as private benefits (increased wages in a more highly unionised, manufacturing sector.) Those circumstances no longer adhere in the US and many other developed economies, and certainly don’t apply to South Africa. Nor do highly centralised dictatorial or authoritarian political economies have lessons to offer our constitutional democracy. China could eliminate 90% of its population living in extreme poverty (<\$2 a day) in less than 15 years because the politburo decided to do so. G Allison ‘Beijing’s Anti-Poverty Drive Has Lessons for All’ *China Daily* (28 August 2018). South Africa cannot employ central planning backed up by the jackboot of the state. Moreover, eliminating extreme poverty cannot be our ultimate goal. In South Africa, we measure poverty at a much higher level, according to a new multidimensional poverty index including various socio-economic factors. D Yu ‘There’s a New Way of Measuring Poverty in South Africa: Here’s How It Works’ *The Conversation* (11 June 2018). Even if our national poverty line is set at \$2.4 a day, almost half of South Africans were mired in poverty prior to the pandemic. N Gous ‘SA Most Unequal Country in World: Poverty Shows Apartheid’s Enduring Legacy’ *Times Live* (4 April 2018), accessed at <https://www.timeslive.co.za/news/south-africa/2018-04-04-poverty-shows-how-apartheid-legacy-endures-in-south-africa/>.

adequately its learners,<sup>74</sup> a lack of access to basic public services,<sup>75</sup> and limited prospects in the formal and informal economies<sup>76</sup> continue unabated.<sup>77</sup> The post-apartheid literature from 2001 to 2019 demonstrates that our high levels of unemployment flow from structural impediments deeply ingrained in the South African polity, society and economy. As Kingdon and Knight write:

Unemployment in South Africa is so widespread that it demands an explanation. The findings provide little support for the idea that unemployed people choose to be unemployed. The unemployed are, on average, substantially worse off than the informally employed – in terms of income, expenditure and well-being. This contradicts the luxury unemployment interpretation of joblessness, whereby higher household income reduces the incentive to become employed in the informal sector and increases the incentive to consume more leisure. It might be contended that, given the disutility of work, some people prefer to substitute leisure for higher monetary income, so that their apparent deprivation cannot be used to argue that they are constrained to be unemployed. However, if their unemployment is to be interpreted as voluntary, such people should be happier (or less unhappy) than employed people. Our findings show that the unemployed are very substantially and significantly less satisfied with their quality of life than informally employed people. They suggest that unemployment arises not through choice *but through impediments* to entry into informal work, and they are at odds with the notion that unemployment is voluntary ... [W]e find various plausible reasons why the informal sector has been inhospitable to newcomers in South Africa. The apparent act of choice is effectively involuntary. For as long as barriers to entry continue to restrict opportunities in much of the informal sector, this sector will be unable to absorb significantly more of the currently jobless. Unemployed workers face a high probability of remaining unemployed, whatever their search

<sup>74</sup> M Legotla 'Orientation' in M Legotla (ed) *Challenges and Issues Facing the Education System in South Africa* (2014) 1–12. The basic education sector got a small boost in 2020 when it was discovered that recent PIRLS numbers from 2011 through had been misread. M Gustafsson 'A Revised PIRLS 2011 to 2016 Trend for South Africa and the Importance of Analysing the Underlying Microdata' *IDEAS: Working Papers* (02/2020), *Department of Economics, Stellenbosch University* (October 2020), accessed at <https://ideas.repec.org/p/sza/wpaper/wpapers337.html>:

The working paper examines classical score gains between 2011 and 2016 with respect to common items, and then to recalibrate that to the main PIRLS scale ... The paper concludes that South Africa in fact saw a large gain between 2011 and 2016, equal to around 0.05 standard deviations a year. This is a fast rate of improvement by international standards. Of the 43 countries with 2011 to 2016 trends in PIRLS, South Africa displayed the third-steepest improvement, after Morocco and Oman.

However, Professor Gustafsson is careful to note that while improvements have been made, the educational system finds itself subject to ongoing stagnation. This finding of the third steepest improvement depends a great deal on the comparators. Moreover, as the data in the United States has shown, it's the worst-off states or nations that demonstrate the fastest and greatest improvement, because often they began from such a profoundly dismal base. As others educators note, greater investment is required in order for South Africa to demonstrate greater basic improvement in literacy. See, e.g., S Lucwaba 'Revised Finding on SA's Literacy Level a Ray of Hope – But Social Investment is Still Needed' *Daily Maverick* (9 November 2020), accessed at [https://www.dailymaverick.co.za/opinionista/2020-11-09-revised-finding-on-sas-literacy-level-a-ray-of-hope-but-social-investment-is-still-needed/?t\\_l\\_](https://www.dailymaverick.co.za/opinionista/2020-11-09-revised-finding-on-sas-literacy-level-a-ray-of-hope-but-social-investment-is-still-needed/?t_l_).

<sup>75</sup> Z Kon & N Lackan 'Ethnic Disparities in Access to Care in Post-Apartheid South Africa' (2008) 98 *American Journal of Public Health* 2272, 2273–2275.

<sup>76</sup> C Rogerson 'Emerging from Apartheid's Shadow: South Africa's Informal Economy' (2000) 53 *Journal of International Affairs* 673.

<sup>77</sup> J Cramm, A Nieboer, H Finkenflügel & T Lorenzo 'Comparison of Barriers to Employment Among Youth with and without Disabilities in South Africa' (2013) 46 *Work* 19, 22.

activity. A graphic example is provided by the 39,000 applications for 35 permanent jobs as gardeners and cleaners which were advertised by the University of Cape Town.<sup>78</sup>

According to the most recent assessments, technological disruption created by automation and artificial intelligence are only apt to make barriers to entry worse:

For decades, the assumption underlying various development initiatives has been that economic growth and social prosperity can be achieved through the growth of labor-intensive industry, such as manufacturing, thus resulting in the employment of otherwise unemployed individuals. In South Africa, government agencies [have made] this same assumption and [tend to] derive their development plans [on these same grounds]. This [work] challenges this assumption and explores the relationship between the future of labor in South African manufacturing and the integration of automation technology into the manufacturing sector. [It] finds that automating process chains in the manufacturing sector may displace labor by implementing labor-saving technologies in South African firms, but also by placing the competitive advantage in manufacturing to countries more prepared for technological change ... [T]he South African demographic most susceptible to job displacement in this sector is low or semi-skilled, young, black males ... [A] number of policy responses, including skills-upgrading initiatives and a redistribution of some gains achieved through automating processes to those displaced, [might provide] a much needed and enhanced social [security and] welfare net.<sup>79</sup>

Degrees of job loss reflect the sophistication of the economies under scrutiny. Virtually all recent studies note that most new technology employment benefits will flow to developed economies with a well-educated and reasonably adaptable workforce.<sup>80</sup> That discrepancy will have widely divergent effects on developed and emerging economies. If disruptive technologies create new high-skill employment, then those employed in such positions will still be able to afford to pay for less sophisticated work that cannot be entirely automated. That explains, in part, why recent studies suggest that while a mere 50% of jobs in the United States could be negatively effected, over '80% of jobs in Ethiopia ... are at risk of automation in the coming years.'<sup>81</sup> The absence of new employment in many developing countries due to a lack of skilled workers means that unskilled workers or workers with low skills can no longer depend on an egalitarian response from persons who work in more sophisticated industries. The result is a vicious cycling down for those countries that have not invested in new technology and have a largely unskilled workforce.<sup>82</sup> South Africa is

<sup>78</sup> G Kingdon & J Knight 'Unemployment in South Africa: The Nature of the Beast' *Centre for the Study of African Economies, Department of Economics, University of Oxford, IDEAS* (August 2004), accessed at <https://ideas.repec.org/p/wpa/wuwp/0409003.html>. (Emphasis added)

<sup>79</sup> *ibid.*

<sup>80</sup> International Labour Office *A Skilled Workforce for Strong, Sustainable and Balanced Growth: A G20 Training Strategy* (November 2010), accessed at <https://www.oecd.org/g20/summits/toronto/G20-Skills-Strategy.pdf>; D O'Halloran 'How Technology Will Change the Way We Work' *World Economic Forum* (13 August 2015), accessed at <https://www.weforum.org/agenda/2015/08/how-technology-will-change-the-way-we-work/>; McKinsey & Company 'Help Wanted: The Future of Work in Advanced Economies' *McKinsey Global Institute Discussion Paper* (March 2012), accessed at [https://www.mckinsey.com/-/media/McKinsey/Featured%20Insights/Employment%20and%20Growth/Future%20of%20work%20in%20advanced%20economies/Help\\_wanted\\_future\\_of\\_work\\_full\\_report.ashx](https://www.mckinsey.com/-/media/McKinsey/Featured%20Insights/Employment%20and%20Growth/Future%20of%20work%20in%20advanced%20economies/Help_wanted_future_of_work_full_report.ashx); J Schwartz, H Stockton & K Monahan 'Forces of change: the future of work' *Deloitte Insights* (9 November 2017), accessed at <https://www2.deloitte.com/insights/us/en/focus/technology-and-the-future-of-work/overview.html>.

<sup>81</sup> C Harris *Automation and the Future of Labor in the South African Manufacturing Sector* (Cornell, 2018).

<sup>82</sup> G Crespi, E Tacsir & M Pereira 'Effects of Innovation on Employment in Latin America' (2019) 28(1) *Industrial and Corporate Change* 139.

one such country. Moreover, the marriage of the old economic (read white) elites to the new political elites (read black) perpetuates the extractive economic institutions that ensure that South Africa's formal economy and informal economy will continue to diverge.<sup>83</sup>

A few authors demur from such a bleak picture. James Mankiya, Director of McKinsey's Global Institute, asserts that (a) new jobs created by novel technologies (b) along with retraining, will (c) result in little or no job loss.<sup>84</sup> However, the title of his work is telling: 'Companies Should Help You Retrain When You Are Out of a Job'. That's not how most companies operate<sup>85</sup> – and it's hard to imagine that McKinsey's own clients would start to think or to act otherwise. Automation creates efficiencies that generate significantly increased profits. Few companies of any size invest those profits in retraining programmes for redundant/retrrenched employees. The responsibility of retraining usually falls to the state. As we've already seen, even a strongly, centrally-planned nation as China has struggled to reskill and retrain the 9% of the working population left unemployed by the COVID-19 pandemic. Such efforts are almost an afterthought in McKinsey's report:

Governments have a significant role to play, too. That includes working with schools and colleges to make sure that curricula are adapted to the needs of tomorrow.<sup>86</sup>

In the very next breath, Manyika acknowledges that his initial injunction to employers would require 'reversing the trend of law[,]and in some countries[,]the declining public investment in worker training.'<sup>87</sup>

Manyika buries, within this Pollyanna-like assessment, quite useful data and conclusions, especially for South Africa. First, the report recognises that unlike previous 'industrial' revolutions, 'what is different this time is that the shifts [in new employment and job skills] are *accelerating*.'<sup>88</sup> Second, it anticipates that *displacement* by automation could occur at the following levels in different sectors by 2030:<sup>89</sup>

- Accommodation and Food Services: 73%;
- Manufacturing: 60%;
- Transportation and Warehousing: 60%;
- Agriculture: 60%;

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<sup>83</sup> What most of my legal, and especially constitutional law, colleagues fail to appreciate is that until there's a political party (a) with sufficient support and (b) a willingness to rejig the relationships between the state, labour, capital and innovation, nothing significant in this dreary domain will change. At the moment, no political party possesses the traction to bring about such a fundamental shift. However, given that South African constitutional law scholars acknowledge that courts cannot piecemeal reconfigure whole bodies of law, and that such a responsibility belongs to the legislature, it follows that the Constitution (lovely as it is) floats above it all.

<sup>84</sup> J Manyika 'Companies Should Help You Retrain When You Are Automated Out of a Job' *Quartz* (10 October 2018), accessed at <https://qz.com/1383658/companies-should-help-you-retrain-when-youre-automated-out-of-a-job/>.

<sup>85</sup> However, there are notable exceptions. In 2004, IBM set up a multimillion-dollar fund to retrain employees affected by outsourcing. D Gurliacci 'Companies Report Little Pressure Against Outsourcing' (2004) 43(19) *Westchester County Business Journal* 4.

<sup>86</sup> J Manyika 'Companies Should Help You Retrain When You Are Automated Out of a Job' *Quartz* (10 October 2018), accessed at <https://qz.com/1383658/companies-should-help-you-retrain-when-youre-automated-out-of-a-job/>.

<sup>87</sup> *ibid.*

<sup>88</sup> *ibid.* (Emphasis added)

<sup>89</sup> *ibid.*

- Retail Trade: 57%;
- Mining: 53%;
- Construction: 49%.

Most low-skill workers in South Africa are employed in those sectors.<sup>90</sup> Third, the report assumes that rising incomes in emerging economies will generate higher spending and higher consumption, and therefore additional labour demand.<sup>91</sup> South Africa's economy has generated an insufficient number of low-skilled jobs in the last decade, at the very same time as the economy experienced limited to negative growth. (Where are new aspirant, low-skill job seekers to go?) As of December 2020, while still in the midst of a global pandemic-induced recession, there's limited demand for whatever South Africa does have to offer:

Based on our assessment, the most affected sectors are construction, personal services, trade, catering, hospitality, transport, storage, and communications. *The crisis also brought manufacturing and mining to a halt.*<sup>92</sup>

The Manyika/McKinsey Report also fails to acknowledge how many emerging economies were in real distress prior to the pandemic. Brazil has been in freefall since 2016 – with an 8% contraction of its GDP.<sup>93</sup> Other countries are caught in debt traps that make the proposed investments in human capital impossible. In 2018, Turkey's economy was severely battered after its debt ratio reached 60%. As previously noted, our debt ratio at the end of 2019 stood 62.2%. South Africa officially entered a recession after the second straight quarter of negative growth to begin 2018.<sup>94</sup> It ended 2019 with two straight quarters of negative growth and a second technical recession. However, 60% clearly does not represent a magic threshold for debt-ratio instability and default, since we blew past that number by the end of 2019. Still, a debt ratio expected in government quarters to rise to between 83% and 93% as a result of a crushed COVID-19 economy and to over 100% by external analysts augurs ill.<sup>95</sup>

South Africa has little room to move.<sup>96</sup> As StatsSA notes:

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<sup>90</sup> H Borat, C Rooney & F Steenkamp 'Understanding and Characterising the Services Sector in South Africa' in R Newfarmer, J Page & F Tarp (eds) *Industries without Smokestacks: Industrialisation in Africa Reconsidered* (2018).

<sup>91</sup> J Manyika 'Companies Should Help You Retrain When You Are Automated Out of a Job' *Quartz* (10 October 2018), accessed at <https://qz.com/1383658/companies-should-help-you-retrain-when-youre-automated-out-of-a-job/>.

<sup>92</sup> 'South Africa Looks Toward Inclusive Recovery to Stabilize Debt, Boost Growth – Conversation with Director-General Dondo Mogajane' *IMF Country Focus* (3 August 2020), accessed at <https://www.imf.org/en/News/Articles/2020/08/03/na080320-south-africa-looks-toward-inclusive-recovery-to-stabilize-debt-boost-growth>. (Emphasis added)

<sup>93</sup> R Yabiko & R Bone 'Derailed Locomotive? Petrobras Investments and Economic Growth in Brazil' (2018) 6(1) *International Journal of Production Management and Engineering* 47; 'Brazil's Worst Recession on Record' *BBC News* (7 March 2017), accessed at <https://www.bbc.com/news/business-39193748>.

<sup>94</sup> 'SA in Technical Recession as Second Quarter GDP Falls' *Fin24* (4 September 2018), accessed at <https://www.fin24.com/Economy/sa-in-technical-recession-as-second-quarter-gdp-falls-20180904>.

<sup>95</sup> P Naidoo 'Moody's Warns of South Africa's Debt Rising Above 100%' (10 July 2020), accessed at <https://www.bloomberquint.com/onweb/moody-s-sees-risk-of-s-africa-s-debt-rising-to-more-than-100>.

<sup>96</sup> N Moola 'Government Doesn't Seem to Grasp the Meaning of SA's Parlous Finances' *Business Maverick* (13 November 2019).

South Africa's economy suffered a significant contraction during April, May and June, when the country operated under widespread lockdown restrictions in response to COVID-19. Gross domestic product (GDP) fell by just over 16% between the first and second quarters of 2020, giving an annualised growth rate of -51%.<sup>97</sup>

Without money in the coffers, the likelihood of state-driven reskilling seems extremely unlikely. Keeping people alive comes first.

### *Pollyanna assessments and a bracing analysis: Re-education*

As for re-education, that's also not happening. First, the massification of education – often in disciplines at the core of a 21st century curriculum – reflects a justifiable desire for redress, but an inability to generate graduates to fit the requirements of a 21st century economy.<sup>98</sup> Second, tuition or course offerings still follow 20th century modalities. But what will really hold South Africa back? Only 37–41% of learners passed their matric (high school) exams between 2016 and 2018.<sup>99</sup> Only 12% of learners go on to university. Only 6% of learners receive some form of university qualification six years after their matric exams.<sup>100</sup> Only 4% of learners secure a university degree six years after their matric exams.<sup>101</sup> How a society that produces so few college graduates will make the transition to, or be able to take advantage of, a highly automated economy defies the kind of easy, unsupported prognostication that Manyika and McKinsey offer.

Other analysts who have analysed the effects of innovation and automation on South Africa also tend to pay insufficient attention to the structural impediments that face us. Although Daniel le Roux contends that only 35% of the existing workforce in South Africa will be eliminated by the innovation revolution, his lower figures appear to reflect a function of four analytical choices that don't seem to 'fit' South Africa's economy.<sup>102</sup> First, his use of 'social shaping of technology' literature<sup>103</sup> – which remains agnostic as to how technology might work itself out – runs counter to more recent assessments of the accelerating nature of this disruptive technological revolution and the degree to which permanent technological unemployment meets the desiderata for wicked problems fleshed out in this book. Indeed, he actually notes that current drivers of novel technology – from Mark Zuckerberg to Elon Musk – contend that most non-expert observers underestimate the rate of social and economic change that disruptive technologies will usher in.<sup>104</sup> Secondly, Le Roux identifies South Africa as an upper-middle income country, whilst only occasionally noting that

<sup>97</sup> 'Steep Slump in GDP as COVID-19 Takes Its Toll on the Economy' *StatsSA* (8 September 2020), accessed at <http://www.statssa.gov.za/?p=13601>.

<sup>98</sup> M Ramchander & M Naude 'The Relationship Between Increasing Enrolment and Student Academic Achievement In Higher Education' (2018) 15(4) *African Education Review* 135, 136, 146–147.

<sup>99</sup> K Child 'The Real – Falling – Matric Pass Rate Signals Need for Better Foundation Teaching' *Business Day* (4 January 2019), accessed at <https://www.businesslive.co.za/bd/national/education/2019-01-04-the-real-falling-matric-pass-rate-signals-need-for-better-foundation-teaching-says-equal-education/>.

<sup>100</sup> J Donald & B Amato 'What's Love Got to Do with Learning?' *Mail & Guardian* (22 February 2019), accessed at <https://mg.co.za/article/2019-02-22-00-whats-love-got-to-do-with-learning>.

<sup>101</sup> *ibid.*

<sup>102</sup> D le Roux 'Automation and Employment: The Case of South Africa' (2018) 10 *African Journal of Science, Technology, Innovation and Development* 507.

<sup>103</sup> *ibid.* at 510.

<sup>104</sup> *ibid.* at 515.

the vast majority of the country lives under conditions more commonly associated with lower-income countries.<sup>105</sup> Thirdly, it therefore comes as little surprise that he doesn't place sufficient weight on the degree to which South Africa's challenges stem directly from the structural impediments inherited from the apartheid regime and colonial rule, as well as the legion of policy errors implemented under our post-1994 democratic regime. Fourth, le Roux bases a sizeable amount of his statistical analysis on StatsSA,<sup>106</sup> a source that generally underestimates unemployment figures because it is severely underfunded. Finally, a substantial amount of his theoretical analysis – 'shifting shapes' – relies on the history and the current state of fully developed and inclusive economies that bear little resemblance to South Africa's elitist, extractive economy.<sup>107</sup> If South Africa temporarily escapes some of the ill effects of permanent technological unemployment, then it will have one primary cause. Even adoption of so-so automation may cost more than continued use of unskilled labour, especially during a period of reduced revenue created by the pandemic.

### *The growing gender gap*

Other structural impediments exist. For example, one might think gender discrimination would increase along with levels of unemployment. But that will vary from developed economies to emerging economies:

In the United States, [r]esearch shows that men and women will not equally experience job losses due to automation. Overall, men stand to gain one job for every three jobs lost to technological advances, while women are expected to gain one job for every five or more jobs lost. On the other hand, as social skills are particularly important in high-paying jobs that are difficult to automate, the shift in women's employment towards social skill-intensive occupations may mean women actually benefit from automation. Research from the United States shows that the three occupations expected to grow the most between 2014 and 2024 are personal care aides, registered nurses and home health aides.<sup>108</sup>

According to recent studies, women in South Africa's economy will not fare so well in a highly automated society: 'Women are underrepresented in the jobs that shape the design and implementation of technology.'<sup>109</sup> A long-standing, solid body of evidence demonstrates that women in less well-developed countries, where social mores tend to be rather traditional and patriarchal, will continue to be trapped by a concatenation of factors from infanticide, to malnourishment, to poor healthcare, to limited education, to childcare responsibilities.<sup>110</sup> Thus, upwards of three million women in South Africa

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<sup>105</sup> *ibid.* at 510.

<sup>106</sup> *ibid.* at 508.

<sup>107</sup> *ibid.*

<sup>108</sup> B Faith 'Automation, Women, and the Future of Work' (2017) 1 *Rapid Response Briefing: Sharing Global Knowledge for Global Change* 1, accessed at <http://opendocs.ids/opendocs/handles/123456789/13126>.

<sup>109</sup> A Hegewisch, C Childers & H Hartmann 'Women, Automation, Artificial Intelligence and the Future of Work' *Institute for Women's Policy Research* (13 March 2019), accessed at <https://iwpr.org/publications/women-automation-future-of-work/>; E Dabla-Norris & K Kochnar 'Women, Technology and the Future of Work: More than Ever, Women Will Need to Break the Glass Ceiling' *International Monetary Fund Blog* (16 November 2018), accessed at <https://blogs.imf.org/2018/11/16/women-technology-and-the-future-of-work/>.

<sup>110</sup> A Sen 'More Than 100 Million Women are Missing' (1990) 37 *New York Review of Books* 61; A Sen 'More Than 100 Million Women are Missing' (1990) 367 *The Lancet* 185; A Sen *Development as Freedom*

currently in the workforce might see a steep reversal in fortune. Most middle-class families that can afford domestic workers can easily cut down on that expense should employment opportunities contract. By and large, poor, black South African women will lose out. It's equally likely that significant discrimination at the high end of the employment scale will not work to the advantage of well-educated South African women – despite greater social sensitivity. Patriarchy remains too deeply entrenched at the very moment that automation accelerates.<sup>111</sup> Women, irrespective of colour, will not claw their way back to equality without a radical reorientation of social mores and a fundamental redistribution of wealth. This news isn't news. In the World Bank's 2012 report, *South Africa: Focus on Inequality of Opportunity*, analysts concluded that deeply ingrained barriers would prevent roughly 67% of young South Africans – primarily black South African girls – from reaching even the very first rung on the ladder of development and self-actualisation.<sup>112</sup>

But women are not alone with respect to structural impediments. Amongst first generation working-class, middle-class and professional-class male employees, the shock waves of unemployment will be felt throughout South African society. Male employees from disadvantaged communities often support from 15 up to 20 other persons in their extended families.<sup>113</sup> The accelerating elimination of jobs (along with 2020's COVID-19's shock to the economy) – combined with an absence of savings and wealth<sup>114</sup> – will place increasingly more individuals and their extended families at risk.

### *Land reform and land restitution*

South Africans are well aware of these challenges. This awareness has had a distinct effect on current South African politics – and the policies adopted by the African National Congress and the Economic Freedom Fighters.<sup>115</sup> In lieu of employment and the provision of basic services, a large number of South Africans have justifiably turned toward a legitimate demand for historical redress with respect to land expropriated under colonial rule and the apartheid regime. The demand is captured in the phrase 'expropriation without compensation'. It follows, so the demand goes, that s25 of the Constitution – the property clause – must be amended in order to ensure that redress occurs.

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(1999); M Nussbaum *Women and Human Development: The Capabilities Approach* (2000). According to Debra Ray's analysis in 2015, Sen's methodology suggests that at least 200 million women are missing in developing countries; D Ray 'Where are All the Women?' *World Economic Forum* (19 October 2015), accessed at [www.weforum.org](http://www.weforum.org). (Demonstrates the intractability of patterns of gender discrimination in most parts of the developing world.)

<sup>111</sup> C Albertyn 'The Stubborn Persistence of Patriarchy: Gender Equality and Cultural Diversity in South Africa' (2009) 2 *Constitutional Court Review* 165.

<sup>112</sup> I Fernando, S Mahajan, A Dennis, S Tiwari, A Hoyos, S Mitra, P Ngwenya & A Narayan 'South Africa: Focus on Inequality of Opportunity' (2012) *World Bank Working Paper* 71553.

<sup>113</sup> A Khoza 'On Average, Every Worker Supports 15 Dependents – Police Union' *News24* (20 July 2017), accessed at <https://www.news24.com/SouthAfrica/News/on-average-every-worker-supports-15-dependents-police-union-20170720>.

<sup>114</sup> F Botha, C Simleit & G Keeton 'The Determinants of Household Savings in South Africa' (2011) 35(3) *Studies in Economics and Econometrics* 1.

<sup>115</sup> How seriously government takes the demand for reform and restitution, two years into Ramaphosa's presidency, is reflected in his recent decision to revisit a brief that found that s25 of the Constitution was sufficient for the government's purposes and the people's needs. See 'Ramaphosa: Cabinet Will Consider Minority Report on Land Reform' *NewsWire24* (1 November 2019), accessed at [polity.org.za](http://polity.org.za).

Our polity finds itself in this position because the institutions designed to affect such redress after 1994 have failed to do so. While the legitimacy of the call cannot be gainsaid, it's worth asking whether such redress functions as a desirable substitute for gainful employment. Analysis of effective land restitution suggests that it does not. In an extensive evaluation of land restitution to the Khomani Khoisan community, Dikgang and Muchapondwa found that although the beneficiaries received greater access to natural resources, not only did the restituted land fail to increase per capita income, the use of restituted land actually increased poverty.<sup>116</sup> That result requires further explanation. A significant cohort of persons who secured restituted land actually had other forms of income and employment that enabled them to secure access to a panoply of other essential basic services (or welfare benefits). This cohort enjoyed an increase in overall income. Persons who used the land as a primary source of income experienced a *decrease* in overall financial revenue. However, consistent with the call for redress, persons and communities that had their land claims recognised experienced an enhanced sense of wellbeing. Since a sense of justice and fairness cannot be reduced to a pecuniary form, these analysts (and others) recognise that for land restitution to be effective – especially in rural areas – it must be part of a 'broader ... developmental strategy'.<sup>117</sup> On its own, land restitution allows indigenous communities to resurrect traditional ways of life without improving or augmenting other essential aspects of daily existence. This book draws an additional conclusion. Land redress, while necessary, will prove insufficient in staving off the negative effects of significant job loss due to new technologies and the automation of low-skill occupations.

### *The limits of socio-economic rights*

Were it not for redistribution in terms of social welfare grants to children and the elderly, as well as increased access to such basic goods and services as electricity, water and housing, and on basic, secondary and tertiary education, many South Africans would have been worse off at the end of 2019 than they were in 1994.<sup>118</sup> That's a conclusion worth further exploration.

As Nora Lustwig shows in her comparison of fiscal redistribution in seven middle-income countries – Brazil, Chile, Colombia, Indonesia, Mexico, Peru and South Africa – the largest redistributive policies and budgets and the greatest redistributive effects have been implemented and experienced in South Africa.<sup>119</sup> According to Lustwig's analysis, 45% of the government's R1,58 trillion 2015 spend went to education (19%), social grants (14%), and public health (12%). By and large, that 45% reflects services for a portion of the population that had been intentionally underresourced so that it would remain quiescent under the jackboot of colonial rule and apartheid. The extremely low base upon which post-apartheid South Africa began in 1994 accounts for the place that it occupies in

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<sup>116</sup> J Dikgang & E Muchapondwa 'The Effect of Land Restitution on Poverty Reduction among the Khomani San "Bushmen" in South Africa' (2016) 84 *South African Journal of Economics* 63.

<sup>117</sup> *ibid.* at 67.

<sup>118</sup> Although no comparative numbers are available, it's entirely possible that more South Africans are worse off as of May 2020 than they were in May 1994.

<sup>119</sup> N Lustig 'Inequality and Fiscal Redistribution in Middle Income Countries: Brazil, Chile, Colombia, Indonesia, Mexico, Peru and South Africa' (2016) 7 *Journal of Globalization and Democracy* 17.

this hierarchy of redistribution. Lustwig's study also acknowledges South Africa's ongoing status as the country with the world's highest Gini-coefficient.<sup>120</sup>

Fully justiciable socio-economic rights are not the answer. It may be true that the failure to provide many material and immaterial goods results in the ongoing underrepresentation of the poor in the public square. But fully justiciable socio-economic rights will not change the fact that roughly 46% of pre-pandemic South Africans (or 24 million people) lived below the poverty line of R620 per month.<sup>121</sup> The COVID-19 pandemic blew that house of cards down. Rights cannot correct an economy in free fall, reverse a contracting fiscus, or fix systemic problems with the delivery of such essential public goods as education, health or social security grants.<sup>122</sup> Under such circumstances, rights cannot function as vehicles for dramatic redistribution of wealth. Only collective action and democratic politics can effect policies that will generate greater wealth and allow for greater redistribution of wealth.<sup>123</sup> Indeed, the ongoing emphasis placed on socio-economic rights as vehicles for transformation suggests that most South African legal academics are unaware that the South African budget has the greatest redistributive effect among comparable middle-income countries.<sup>124</sup> More money for education, health and social grants (even in the form of salaries that constitute 45% of government spending) will not provide sufficient redress to realise the kind of dramatic change that would lift 30.4 million people<sup>125</sup> above the food poverty line of \$5 dollars a day (as opposed to the extreme poverty line of \$2) and turn them into citizens with actual political agency.

### C. Analysis of the South African Economy's Current Position as a Technology Follower and its Inability to Respond to Permanent Technological Unemployment

The last section was, by and large, concerned with the past. Past is occasionally prologue. The structural impediments inherited from colonial and apartheid rule have blocked

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<sup>120</sup> *ibid.*

<sup>121</sup> David Bilchitz uses the upper-bound poverty line and not the extreme poverty line of less than \$2 a day. That's little cause for satisfaction. *StatsSA Poverty Trends in South Africa: An Examination of Absolute Poverty Between 2006 and 2011 Report no 03-10-06* (3 April 2014), accessed at <http://beta2.statssa.gov.za/publications/Report-03-10-06/Report-03-10-06March2014.pdf>>8,12.

<sup>122</sup> B Fleisch *Primary Education in Crisis* (2009).

<sup>123</sup> Indeed, efforts to achieve redistribution through collective action will likely be most effective only where social movements work with trade unions. S Friedman 'Beyond the Fringe? South African Social Movements and the Politics of Redistribution' (2012) 39 *Review of African Political Economy* 85.

<sup>124</sup> N Lustig 'Inequality and Fiscal Redistribution in Middle Income Countries: Brazil, Chile, Colombia, Indonesia, Mexico, Peru and South Africa' (2016) 7 *Journal of Globalization and Development* 17. India spends a mere 1% of GDP on healthcare. A Dash & S Mohanty 'Do Poor People in the Poorer States Pay More for Healthcare in India?' (2019) 19 *BMC Public Health*, accessed at <https://bmcpublihealth.biomedcentral.com/articles/10.1186/s12889-019-7342-8>.

<sup>125</sup> Siphso Mthathi, executive director of Oxfam SA, cited this number upon releasing Oxfam's 2019 report on inequality in South Africa. For Mthathi's comment, see K Koko '#OxfamReport: 30.4 million South Africans Live in Poverty' *IOL* (21 January 2019), accessed at <https://www.iol.co.za/the-star/news/oxfamreport-30.4-million-south-africans-live-in-poverty-18893988>. For the Oxfam report, see Oxfam 'Public Good or Private Wealth?' *Oxfam Briefing Paper* (2019).

meaningful revolution of the economy and will likely continue to do so in the future.<sup>126</sup> This section looks at three facets of South Africa's economy that will in all probability determine its capacity to perform adequately in the long term:

- its current position with respect to technology adoption and innovation;
- the health of our public sector; and
- an analysis of the effect of automation and permanent technological unemployment on various segments of the private sector.

*South Africa's extremely poor position in terms of 21st century modes of production: We are technological followers*

The CSIR created the graphic below based upon the World Economic Forum's report – *Readiness for the Future of Production 2018*.<sup>127</sup> The graph provides a useful framework for understanding where South Africa currently resides with respect to how technology and automation will affect our labour market. We are *followers*. In short, South Africa is amongst the least well placed to take advantage of productivity enhancing innovation and to ride out the current technological disruption of the global economy.<sup>128</sup>

The economy of 2018 reflected this position. Third quarter growth in manufacturing occurred primarily in commodity sectors such as iron ore and steel, metal products and machinery, wood and paper and petroleum products.<sup>129</sup> (The car industry – an apartheid era autarkic creation – is an outlier.<sup>130</sup> However, even this outlier saw car sales fall by 98.2% in April 2020 as a result of COVID-19. The fall is consistent with other countries that saw a glut of new, barely used cars come on to the market from rental car businesses in distress or already bankrupt.) Transport provided the second largest bump: a derivative gain required for meaningful manufacturing profits.<sup>131</sup> As for agriculture, increased production

<sup>126</sup> V Sulla & P Zikhali 'Overcoming Poverty and Inequality in South Africa: An Assessment of Drivers, Constraints and Opportunities' *World Bank Working Paper 124541* (2018), accessed at <http://documents.worldbank.org/curated/en/530481521735906534/Overcoming-Poverty-and-Inequality-in-South-Africa-An-Assessment-of-Drivers-Constraints-and-Opportunities>.

<sup>127</sup> The adaptation can be found in a conference presentation. C Saunders *Shaping the Future of Production in South Africa: Preliminary Country Readiness Results – World Economic Forum* (2018) 8, accessed at <https://conference2017.csir.co.za/sites/default/files/Documents/Shaping%20the%20Future%20of%20Production%20in%20South%20Africa.pdf>. Saunders' findings are grounded in a report by the World Economic Forum produced by C Martin, R Samans, H Leurent, F Betti, M Drzeniek-Hanouz, T Geiger, J Aurik, M Zuazua, O Schulz & A Blaylock 'Readiness for the Future of Production Report 2018' *World Economic Forum: System Initiative on Shaping the Future of Production* (2018), accessed at [http://www3.weforum.org/docs/FOP\\_Readiness\\_Report\\_2018.pdf](http://www3.weforum.org/docs/FOP_Readiness_Report_2018.pdf).

<sup>128</sup> C Martin, R Samans, H Leurent, F Betti, M Drzeniek-Hanouz, T Geiger, J Aurik, Zuazua, O Schulz & A Blaylock 'Readiness for the Future of Production Report 2018' *World Economic Forum: System Initiative on Shaping the Future of Production* (2018) 12, 19, 220-1, accessed at [http://www3.weforum.org/docs/FOP\\_Readiness\\_Report\\_2018.pdf](http://www3.weforum.org/docs/FOP_Readiness_Report_2018.pdf).

<sup>129</sup> 'The Recession Ends as GDP climbs by 2.2%' *StatsSA* (4 December 2018), accessed at <http://www.statssa.gov.za/?p=11817>.

<sup>130</sup> G Ritchie 'SA Motor Industry's Sweet Deal' *Mail & Guardian* (1 February 2019), accessed at <https://mg.co.za/article/2019-02-01-00-sa-motor-industrys-sweet-deal>.

<sup>131</sup> Transport is measured with storage and communications: 'The Recession Ends as GDP climbs by 2.2%' *StatsSA* (2018), accessed at <http://www.statssa.gov.za/?p=11817>. Regarding communications specifically, the profits from Vodacom's and MTN's duopoly demonstrate an ongoing abuse of customers and a supremely



UNDERSTANDING TECHNOLOGICAL LEADERS FOLLOWERS IN THE 21ST CENTURY (AND SOUTH AFRICA'S POSITION AS FOLLOWER)

by 6.5% in Q3 can hardly be said to offset the sector's 33.6% contraction in Q1 of 2018, and its 29.2% contraction in Q2.<sup>132</sup> Major companies across the Johannesburg Stock Exchange saw shares drop around 30% and 40%,<sup>133</sup> government bonds weakened,<sup>134</sup> and Fitch warned that its sub-investment grade with a stable outlook could deteriorate if the debt of SOEs continued to accelerate.<sup>135</sup> (It did – and the haemorrhaging has yet to stop.) Mining continued to contract – from its 15% share of the economy to an 8% share.<sup>136</sup> Worst of all: Eskom's ongoing failure to produce sufficient electricity.<sup>137</sup> The losses in 2019

ineffective regulator, ICASA. J Vermeulen 'ICASA Has Once Again Failed to Address Vodacom-MTN Duopoly – Telkom' *My Broadband* (27 September 2018), accessed at <https://mybroadband.co.za/news/cellular/277407-icasa-has-once-again-failed-to-address-vodacom-mtn-duopoly-telkom.html>.

<sup>132</sup> 'The Economy Shrinks by 0.7% in Q2: 2018' *StatsSA* (4 September 2018), accessed at <http://www.statssa.gov.za/?p=11507>.

<sup>133</sup> Overberg Asset Management '2018 Cements Worst Five-Year Period for JSE in 50 years' *Fin24* (14 December 2018), accessed at <https://www.fin24.com/Economy/the-year-2018-cements-worst-five-year-period-for-the-jse-20181214>.

<sup>134</sup> K Gernetzky 'Bonds Settle at Weaker Levels As Treasury Moves To Finance Budget Deficit' *Business Day* (1 November 2018), accessed at <https://www.fin24.com/Economy/the-year-2018-cements-worst-five-year-period-for-the-jse-20181214>.

<sup>135</sup> H Joffe 'Fitch Retains Its Junk Rating for SA' *Business Day* (15 June 2018), accessed at <https://www.businesslive.co.za/bd/economy/2018-06-15-breaking-news-fitch-ratings-affirms-south-africa-rating-at-bb/>.

<sup>136</sup> 'The Recession Ends as GDP Climbs by 2.2%' *StatsSA* (2018), accessed at <http://www.statssa.gov.za/?p=11817>.

<sup>137</sup> To cope with the shortage of supply, Eskom implemented loadshedding – extending scheduled and unscheduled electrical outages across various parts of the grid so that demand would not outstrip supply. According to Public Enterprises Minister Pravin Gordhan (as he then was), the factors leading to the necessity of loadshedding encompass system breakdowns, insufficient funds for repair and maintenance, underperformance of new power stations due to sub-standard manufacture of equipment, and a decline in maintenance expenditure and the availability of parts. For a report on Gordhan's analysis, see 'Here is Eskom's Loadshedding Outline until March' *BusinessTech* (6 December 2018), accessed at <https://>

Q3 of 1% did not begin to tell us how regular loadshedding would later ripple across the economy and affect general output. Eskom's massive loadshedding in Q4 of 2019 led to a second recession in two years, and the expected and final rating agency downgrade to junk by Moody's in March 2020.

South Africa's paralysed polity was thus already on life-support when COVID-19 arrived in 2020. Domestic lockdowns and a deep and immediate global recession put the final nail in the coffin. Whether South Africa can resurrect itself remains unclear and even unlikely, according to Michael Sachs,<sup>138</sup> given the country's extremely poor fundamentals, an ongoing pandemic and other wicked problems assayed in this work. Sachs, one of the prime movers behind the government's April 2020 stimulus and relief package, wrote as follows at the end of October 2020:

The social and economic crisis generated by the COVID-19 pandemic has accelerated South Africa's fiscal crisis. [Twenty-six years] ago, South Africa was confident about its economic future ... The expansion of public sector commitments ... included a permanent expansion of core public services (basic education, health and policing), an increase in pro-poor fiscal transfers [and] significant real improvements in the remuneration of public employees ... But the path of economic growth shifted to a permanently lower trajectory [post 2010] ... South Africa's economic growth slipped year after year. Even if South Africa had avoided electricity supply constraints, or resisted the rising tide of corruption, these shifts would still have implied slowing growth and the need for significant adjustments to South Africa's policy framework ... Improvements in the salaries of public servants outpaced the growth of compensation budgets ... [In addition] ... the quality of public investments deteriorated so severely that large additional subsidies were required to keep public utility systems afloat. Meanwhile, government continued to widen the scope of its fiscal commitments ... including free university education. These new obligations added to the pressure on core public services ... Despite the slowdown in growth, private earnings at the affluent end of the labour market continued to grow faster than the economy, leading to buoyant tax revenue. In the face of a seemingly inexorable decline in economic fortunes – and after the second blow to growth in 2015 – tax buoyancy ... went into reverse. Following COVID-19, the fiscal position is profoundly unsustainable ... This raises inevitable questions about willingness of the state to honour its obligations in full ... [T]he primary balance ... that stabilises debt is so large that the expenditure cuts (or tax increases) needed to achieve it are not politically feasible. The ... reductions in core public services ... could impose unsustainable social pressures and choke off the recovery, imposing a second blow to livelihoods on top of the COVID-19 catastrophe. South Africa is a small, vulnerable, fiscally unsustainable economy on the periphery of global capitalism ... South Africa has been held together (*just*) by an implicit fiscal bargain. High levels of taxation have financed social grants, universal access to basic education and healthcare, low-cost houses, free basic water and electricity, real pay gains for public servants and a rising distribution of rent to the middle strata. All of this has sustained the income and consumption of the majority. [Other] collective goods – pensions, education, healthcare, security and community infrastructure – are supplied to affluent households through segregated systems of provision ... [Our increasingly large] debt overhang implies (logically and considering the

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[businesstech.co.za/news/energy/289730/here-is-eskoms-load-shedding-outline-until-march-gordhan/](https://businesstech.co.za/news/energy/289730/here-is-eskoms-load-shedding-outline-until-march-gordhan/).

<sup>138</sup> Michael Sachs predicted the dire fiscal consequences of failing to deal effectively with the pandemic's economic consequences before the Level 5 lockdown occurred. (Private notes on stimulus and relief package in circulation prior to March 2020 lockdown. On file with author.) M Sachs 'Macro-Policy in the Pandemic Fiscal Imperatives and Financial Considerations' *CDE Webinar: Covid-19 and SA's Public Finances* (24 April 2020), accessed at <https://www.cde.org.za/wp-content/uploads/2020/04/Michael-Sachs-presentation-slides.pdf>.

evidence of history) a significant rise in the general rate of taxation. Without it, [the state] will not be able to both service the debt and maintain an acceptable level of public services. Tax increases will need to be focused on the most affluent and corporate capital ... At the same time consumption of collective goods will have to be reduced to a level more consistent with South Africa's waning economic fortunes. The poor and lower middle class depend to a large degree on public consumption to sustain their living standards ... The current contestation about public sector salaries is a first indication of a struggle to determine who will bear the brunt of adjustment.<sup>139, 140</sup>

Irrespective of Sachs' prognosis, and more germane to my analysis, Kate Millington has developed a method of assessment of the labour market in Africa which contains some useful suggestions regarding South Africa's future predicament, although exceptions apply.<sup>141</sup> As a general matter, we have already seen job polarisation across the globe.<sup>142</sup> That is, high-skill employees (engineers, senior managers, tech sector personnel, professionals) remain highly desirable, whilst work for low-paid, unskilled workers (domestic workers, grocery clerks, sales personnel in conventional brick and mortar stores) has flat-lined or begun to disappear.<sup>143</sup> The largest cohort of jobs or routine employment – clerks, machine operators, plant workers, transportation personnel – will vanish.<sup>144</sup> In a country such as

<sup>139</sup> M Sachs 'Fiscal Dimensions of South Africa's Crisis' *Southern Centre for Inequality Studies, Working Paper 5* (29 October 2020); M Sachs 'South Africa's Waning Economic Fortunes Demand Harsh Policy Adjustments: Who Will Bear the Brunt?' *The Conversation* (October 29, 2020), accessed at <https://theconversation.com/south-africas-waning-economic-fortunes-demand-harsh-policy-adjustments-who-will-bear-the-brunt-149019>.

<sup>140</sup> Could the government's standing in the international community possibly get any worse? Yes. The South African government desperately requires confidence from investors both at home and abroad. In its third Annual Investment Conference, South Africa forgot to put its best foot forward: its online platforms failed to run smoothly as its server collapsed before it started.

Eventually, organisers managed to email links to various events – forget about trying to log on via the website – with varied success ... Mines and Energy Minister Gwede Mantashe said he wanted the sector to grow and contribute more to South Africa's GDP than the 8% it does at present ... CEO of the Minerals Council South Africa Roger Baxter said the council was of the view that exploration could be increased three or even five times from current levels. But the usual constraints, such as unreliable power supplies, remain firmly in place. Mantashe acknowledged that "self-generation" for the industry was crucial. Yet Gold Fields is still waiting after three years for permission to start a solar project to help power its South Deep mine. Many of the obstacles to investment in the sector are already known, but have not been removed.

Instead of demonstrating that it could get things done, the government did the opposite. E Stoddard 'Failed Virtual Portal Gets SA Investment Conference Off to a Farcical Start' *Business Maverick* (17 November 2020), accessed at <https://www.dailymaverick.co.za/article/2020-11-17-failed-virtual-portal-gets-sa-investment-conference-off-to-a-farcical-start/>.

<sup>141</sup> K Millington 'How Changes in Technology and Automation Will Affect the Labour Market in Africa' *UK Department for International Development: Helpdesk Report* (2017), accessed at <http://www.gsdrc.org/wp-content/uploads/2017/10/Impact-of-automation-on-jobs-in-Africa.pdf>.

<sup>142</sup> D Autor & D Dorn 'The Growth of Low-skill Service Jobs and the Polarization of the US Labour Market' (2013) 103 *American Economic Review* 1553.

<sup>143</sup> United Nations Conference on Trade and Development 'Robots and Industrialization in Developing Countries' *UNCTAD Policy Brief #50* (2016), accessed at [http://unctad.org/en/PublicationsLibrary/presspb2016d6\\_en.pdf](http://unctad.org/en/PublicationsLibrary/presspb2016d6_en.pdf); World Bank 'World Development Report 2016: Digital Dividends' (2016), accessed at <http://documents.worldbank.org/curated/en/896971468194972881/pdf/102725-PUB-Replacement-PUBLIC.pdf>.

<sup>144</sup> K Millington 'How Changes in Technology and Automation Will Affect the Labour Market in Africa'

South Africa, where only 6.8% of society earns a bachelor's degree<sup>145</sup> (and the concomitant access to high-end skilled employment), this degree of polarisation could prove devastating. Can 6.8% carry everyone else?

It's also important to recognise that growth at the upper end of the spectrum will not replicate the same patterns of growth following prior technological revolutions<sup>146</sup> – as manufacturing has in the past.<sup>147</sup> As a result, low- and middle-income economies (such as South Africa) will experience increasing levels of unemployment.<sup>148</sup> The gap between emerging and developed economies will also likely increase.<sup>149</sup> Higher levels of education have enabled growth of 1.5% to 2% in developed economies 'despite manufacturing decline'.<sup>150</sup> But even the advantages of developed economies will not stave off job losses due to technological innovation and automation indefinitely.<sup>151</sup>

### *The public sector*

As I noted at the outset, our public sector could wreck the economy through ongoing systemic failure to produce necessary public goods,<sup>152</sup> a level of indebtedness that South Africa can no longer sustain,<sup>153</sup> endemic corruption<sup>154</sup> and an inefficient bureaucracy

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*UK Department for International Development: Helpdesk Report* (2017) 8, accessed at <http://www.gsdc.org/wp-content/uploads/2017/10/Impact-of-automation-on-jobs-in-Africa.pdf>.

<sup>145</sup> This figure is based on a study of the 2008 cohort of matriculants, and their higher education achievements in the six years following matriculation. The figure 6.8% refers to the proportion of 2008 matriculants who had achieved an undergraduate degree in the six years after matriculation (as we have calculated based on the data in the study). However, the study also found that higher education achievements vary greatly depending on race, and therefore access to wealth: 28% of white learners had earned an undergraduate degree six years after finishing school, as compared to 21% of Asian learners, 7% of coloured learners and 4% of black learners (as calculated by the study authors). H van Broekhuizen, S van der Berg & H Hofmeyr 'Higher Education Access and Outcomes for the 2008 National Matric Cohort' *Stellenbosch Working Paper Series No. WP16/2016* (2016) 45.

<sup>146</sup> N Lee & A Rodríguez-Pose 'Is There Trickle-Down from Tech? Poverty, Unemployment and the High-Technology Multiplier in US Cities' (2016) 106(5) *Annals of the American Association of Geographers* 1114, 1129–1130.

<sup>147</sup> On the growth in the manufacturing sector in the First Industrial Revolution, P Deane *The First Industrial Revolution* (2000) 238–294.

<sup>148</sup> D Rodrik 'Premature Deindustrialization' (2016) 21 *Journal of Economic Growth* 1.

<sup>149</sup> K Chon 'The Future of the Internet Digital Divide' (2001) 44(3) *Communications of the ACM* 116.

<sup>150</sup> K Millington 'How Changes in Technology and Automation Will Affect the Labour Market in Africa' *UK Department for International Development: Helpdesk Report* (2017) 16, accessed at <http://www.gsdc.org/wp-content/uploads/2017/10/Impact-of-automation-on-jobs-in-Africa.pdf>.

<sup>151</sup> *ibid.*

<sup>152</sup> This failure occurs in numerous sectors. But contemporary studies of responses to HIV are particularly illuminating. M Cloete & S Yusuf 'Conceptual Commentary of Public Spaces in Durban, South Africa' (2018) 73 *Town and Regional Planning* 35, 45; P Mhlangu, J Vearey, L Thomas & J Goudge 'Implementing a Multi-Sectoral Response to HIV: A Case Study of AIDS Councils in the Mpumalanga Province, South Africa' (2017) 10(1) *Global Health Action* 1, 8–10.

<sup>153</sup> In 2018, South Africa's government debt was equivalent to 55.8% of the country's GDP. 'South Africa Government Debt to GDP' *Trading Economics* (2019), accessed at <https://tradingeconomics.com/south-africa/government-debt-to-gdp>.

<sup>154</sup> The relationship between poverty and corruption during the two presidential terms of Jacob Zuma (2009–2018) was likely a deciding factor in the loss of several municipalities by the dominant party following the 2016 municipal elections. O Lannegren & H Ito 'The End of the ANC Era: An Analysis of

created by the politisation of state administrative bodies by their political masters.<sup>155</sup> (Let's not forget a public sector wage bill that eats up one-third of the fiscus.<sup>156</sup>) The seeds of such failure can be traced back to the manner in which the ANC thought it could best address the depredations of apartheid and a state that had always served the few at the expense of the many.

Joel Peason, Sarita Pillay and Ivor Chipkin offer an incredibly incisive analysis of how the ANC conceived of the purpose of the National Treasury in 1991 – three years before it assumed control of the levers of political power.<sup>157</sup> In its most benign policy formulation, the National Treasury would be critical in stitching together a nation that did not actually exist. As we know, apartheid policies had created 'foreign' black citizens living in notionally independent Bantustans that engaged in empty political forms of self-rule and self-determination.<sup>158</sup> While the doctrine was a fraud, the actual result was not. Most South Africans had been divested of or never actually possessed citizenship in the Republic.<sup>159</sup> The National Treasury, through its control of the purse, would engage in a process of centralised state-building and the creation of administrative institutions throughout South Africa designed to deliver basic services to those who'd never had access to such material and immaterial goods.<sup>160</sup> State-owned enterprises (SOEs) would not only deliver some of these goods; they were also to be used as vehicles for the development of human capital.<sup>161</sup> Through jobs in SOEs, South Africans historically excluded from the

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Corruption and Inequality in South Africa' (2017) 10 *Journal of Politics and Law* 55, 56–57.

<sup>155</sup> A study by Arthur Goldsmith found that challenges are due far less to the number of personnel, and far more to the quality and productivity of the bureaucratic systems and its employees. A Goldsmith 'Africa's Overgrown State Reconsidered: Bureaucracy and Economic Growth' (1999) 51 *World Politics* 520.

<sup>156</sup> 'In the fiscal year ending in February 2020, the South African government ... [spent] ... around 629 billion rand ... on public sector wages' out of 'a revised estimate of [a total] R1.84 trillion' on the entire budget. D Ndlovu 'Deloitte Commentary on South Africa Budget 2020/21: Trade-offs Required to Achieve Shared Prosperity' *Deloitte South African Budget* (2020), accessed at <https://www2.deloitte.com/za/en/services/tax/deloitte-commentary-2020-21-national-budget.html>; 'EXPLAINER-Why South Africa's Public Wage Bill is a Problem' *Reuters* (27 February 2020), accessed at <https://www.reuters.com/article/safrica-economy-wages/explainer-why-south-africas-public-wage-bill-is-a-problem-idUSL5N2AR33A>.

<sup>157</sup> J Pearson, S Pillay & I Chipkin 'State-Building in South Africa after Apartheid: The History of the National Treasury' *Public Affairs Research Institute* (February 2016) 2–7, 8–14, accessed at <https://pari.org.za/state-building-south-africa-apartheid-history-national-treasury/>. (On the fragmented state and the policies driving Treasury from the ANC's Internal Department of Economic Planning.)

<sup>158</sup> These Bantustans have been cited as an example of the phenomenon of 'sham federacy', a neo-colonial practice also seen in the policies of China, France and America. D Rezvani 'Sham Federacy: China's Autonomous Regions, France's Indochinese Free States and America's Indian Territories' in D Rezvani (ed.) *Surpassing The Sovereign State: The Wealth, Self-Rule and Security Advantages of Partially Independent Territories* (2014) 1–36.

<sup>159</sup> Instead, black people were registered as citizens of the Bantustans, or homelands, under the Bantu Homelands Citizenship Act 26/1970 and the Bantu Homelands Constitution Act 21/1971. In this way they were registered under so-called 'Bantu Authorities' which – paradoxically – only served to entrench the control of the government of the Republic of South Africa over citizens of these supposedly separate administrations. V Ehrenreich-Risner 'The Bantu Authorities System: Removals in Mthunzini District during Apartheid' (2017) 44(1) *Journal of Southern African Studies* 115, 119–120.

<sup>160</sup> J Pearson, S Pillay & I Chipkin 'State-Building in South Africa after Apartheid: The History of the National Treasury' *Public Affairs Research Institute* (February 2016) 3–7, accessed at <https://pari.org.za/state-building-south-africa-apartheid-history-national-treasury/>.

<sup>161</sup> On the relationship between SOEs and the Development Bank of Southern Africa, see W Gumede, M

state apparatus could learn skills and, as importantly, create a black middle class that would initiate a partial redistribution of wealth.<sup>162</sup>

In its more malign form, by running the country through Treasury, the ANC/COSATU/SACP alliance could ensure that the state remained a mechanism designed to advance the interests of the alliance.<sup>163</sup> It's easy to see now how that use of the state apparatus and the National Treasury played out. First, bureaucratic appointments would require fealty to the tripartite alliance. Second, from the Arms Deal<sup>164</sup> to the decade of State Capture,<sup>165</sup> members of the party used the state – in collusion with a broad array of private actors – to advance their own pecuniary interests. But such hindsight is 20/20 and fails to trace, with precision, how the state and its SOEs ran off the rails.

So, what exactly happens when a benign, enlightened path runs headlong into a malign, doctrinally bankrupt path? In the beginning, 1994, the Reconstruction and Development Programme (RDP) attempted to deliver expeditiously basic goods and services long denied to the majority of South Africans.<sup>166</sup> However, only two years later, this egalitarian policy framework was displaced by the Growth, Employment And Redistribution programme (GEAR).<sup>167</sup> The former would have increased foreign debt as it made up for the centuries long depredations of apartheid and colonial rule.<sup>168</sup> The latter envisaged growth and redistribution through an industrial policy predicated upon foreign direct investment and domestic strategic investment programmes (SIPs).<sup>169</sup> The RDP would have necessarily

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Govender & K Motshidi 'The Role of South Africa's State-Owned Development Finance Institutions (DFIs) in Building a Democratic Developmental State' (2011) *Development Bank of Southern Africa: Policy Brief No. 3* 1.

<sup>162</sup> M Gillis 'The Role of State Enterprises in Economic Development' (1980) 47(2) *Social Research* 248; I Forfás *The Role of State Owned Enterprises: Providing Infrastructure and Supporting Economic Recovery* (2010), accessed at [http://edepositireland.ie/bitstream/handle/2262/70648/Forfas20100730\\_Role\\_of\\_SOEs.pdf?sequence=1&isAllowed=y](http://edepositireland.ie/bitstream/handle/2262/70648/Forfas20100730_Role_of_SOEs.pdf?sequence=1&isAllowed=y).

<sup>163</sup> P Holden 'Ensuring Reproduction: The ANC and Its Models of Party Funding' in M Plaut & P Holden (eds) *Who Rules South Africa? Pulling the Strings of Power* (2012) 193.

<sup>164</sup> The South African Arms Deal was a controversial multi-billion-dollar arrangement for military hardware, and subsequently closely connected to allegations of corruption involving important political figures such as former president Jacob Zuma. J van der Westhuizen 'Arms over AIDS in South Africa: Why the Boys Had to Have Their Toys' (2005) 30(3) *Alternatives: Global, Local, Political* 275.

<sup>165</sup> On the damage to state institutions and GDP during Zuma's term of office as president (2009–2018) see 'A Decade of "State Capture" Has Damaged South Africa's Institutions' *The Economist* (25 April 2019), accessed at <https://www.economist.com/special-report/2019/04/25/a-decade-of-state-capture-has-damaged-south-africas-institutions>; M Merten 'State Capture Wipes Out Third of SA's 4.9 Trillion GDP – Never Mind Lost Trust, Confidence, Opportunity' *Daily Maverick* (1 March 2019), accessed at <https://www.dailymaverick.co.za/article/2019-03-01-state-capture-wipes-out-third-of-sas-r4-9-trillion-gdp-never-mind-lost-trust-confidence-opportunity/>.

<sup>166</sup> J Pearson, S Pillay & I Chipkin 'State-Building in South Africa after Apartheid: The History of the National Treasury' *Public Affairs Research Institute* (February 2016) 10–12, accessed at <https://pari.org.za/state-building-south-africa-apartheid-history-national-treasury/>.

<sup>167</sup> *ibid.*

<sup>168</sup> A Enaifoghe 'Political Economy Trajectory: Post-Apartheid Economic Policy Development' (2019) 6(1) *Journal of African Foreign Affairs* 119, 120–121.

<sup>169</sup> How the state conceived of development through GEAR, the Aspen Pharmicare story, and the company's ultimate success in providing cheap generic ARVs, is worth recounting. C Sprague & S Woolman 'Moral Luck: Exploiting South Africa's Policy Environment to Produce a Sustainable National ART Programme'

fragmented control over the material goods the majority of South Africans required.<sup>170</sup> The RDP did not anticipate what centralised political authority (through the ANC's tripartite alliance) would mean for an actual commitment to redistribution. GEAR possessed the virtue and the vice of ensuring that the National Treasury, the Presidency and the ANC had greater control over revenue collection and government spend.<sup>171</sup> What else might be said about this politically-motivated shift in policy? Anthony Butler sums up the results quite tightly:

Since 1994, the ANC has used its political power to make available water, sanitation, electricity, schools, houses, [healthcare] and clinics – basic public services that were previously a near-reserve of whites. The improvement in the quality of life ... cannot be overemphasized. But now that the low hanging fruit of post-apartheid service delivery have been picked, underlying anti-capitalist and anti-statist are resurfacing, supplanted at times of crisis by a restless militancy. What is missing above all is a sense of how the state can be used to harness the dynamic energies of a capitalist economy and to mitigate the inequality and alienation that such an economy is predisposed to generate. Liberation movement intellectuals [still within the ANC] have used quasi-Marxist doctrines to ... cloak[ ] the ANC in an extra-constitutional mantle of unquestionable political authority and to validat[e] their own claims to serve as the instruments of historical destiny. A philosophy dominated by historical inevitability ... [has had] a profoundly undemocratic influence on political leaders.<sup>172</sup>

Butler manages to be both charitable and devastatingly critical. He was well aware of the cronyism, clientelism and corruption that had plagued the ANC and now threatens South Africa's experiment in inclusive democracy.<sup>173</sup> The commitment to party unity over tribal or ethnic divisions might be said to have been a virtue of the ANC as a liberation movement-cum-governing party.<sup>174</sup> In addition, Mandela himself rejected the notion of any purity of doctrine. Shortly after his release, he stated that:

[The] ANC has never been a political party ... the ANC is a coalition ... Some will support free enterprise, others socialism. Some are conservatives, others are liberals. We are united solely by our determination to oppose racial oppression.<sup>175</sup>

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(2006) 22 *South African Journal on Human Rights* 337; S Woolman & C Sprague 'Aspen Pharmacare: Providing Affordable Generic Pharmaceuticals for the Treatment of HIV/AIDS and Tuberculosis' in R Hammann, S Woolman & C Sprague (eds) *The Business of Sustainable Development: Human Rights, Public-Private Partnerships & New Business Models* (1st Edition, 2009) Chapter 13.

<sup>170</sup> J Pearson, S Pillay & I Chipkin 'State-Building in South Africa after Apartheid: The History of the National Treasury' *Public Affairs Research Institute* (February 2016) 10–12, accessed at <https://pari.org.za/state-building-south-africa-apartheid-history-national-treasury/>.

<sup>171</sup> *ibid.*

<sup>172</sup> A Butler *The Idea of the ANC* (2013) 56–57.

<sup>173</sup> The comparative constitutionalism literature has shown that a large cohort of new constitutional democracies (around the globe) have suffered from similar problems of clientelism, cronyism and corruption. S Choudhry '“He had a Mandate”: Constitutionalism in a Dominant Party Democracy' (2009) 2 *Constitutional Court Review* 1.

<sup>174</sup> The ANC alliance spoke of a 'rainbow nation'. The Inkatha Freedom Party purportedly represented an ethnically specific 'Zulu nation'. L Piper 'Nationalism without a Nation: The Rise and Fall of Zulu Nationalism in South Africa's Transition to Democracy, 1975-99' (2002) 8 *Nations and Nationalism* 73, 82–84.

<sup>175</sup> 'Interview with Nelson Mandela' *Washington Post* (June 26, 1990). One might however conclude that Mandela fully understood that he was speaking to an American audience invariably wary of any 'communist' rhetoric – and thus merely made passing mention of socialist members of the ANC with a voice no more

But the suppression of difference and pluralism – without a genuinely unifying belief set – would ultimately create a crisis. The first part of the ANC’s two-pronged plan led to a significant and immediate increase in black civil servants who, along with black professionals, have created a black middle class.<sup>176</sup> That’s all to the good.

Given the number of South Africans mired in poverty, one might be inclined to diminish the importance of the public sector in the transformation of the South African economy. But by the end of 2014, the ratio of public sector employment relative to total employment stood at just under 20%.<sup>177</sup> In addition, earnings in the public sector grew at a rate of 33% whilst earnings in the private sector grew at a rate of 25%.<sup>178</sup>

However, the use of the state to advance the interests of the party has had its malign side. The public sector employs roughly two million workers – spread across the national, provincial and local spheres of government as well as other state institutions (from parks officials to university employees) and a wage bill of roughly R629 billion in 2019/20.<sup>179</sup> In 2019, the government and the public sector already looked to be headed toward a cliff created by corruption, poor corporate governance and a contracting fiscus.<sup>180</sup> COVID-19, other wicked problems and ongoing failures of collective action will likely, in the view of iMichael Sachs, as well as other domestic and international analysts, end South Africa’s experiment in inclusive democracy. (To be fair, Sachs does not describe the impending reckoning that way.) After a three-year wage freeze beginning in 2021, the National Treasury is seeking a staggering R311 billion in wage bill reductions by 2023/24.<sup>181</sup> Not only do such cuts raise questions about the survival of public sector employees, the cuts in budgets for prosecution and courts will make effective oversight of new tenders more difficult and delay trials aimed at bringing those charged with prior instances of maladministration to book.

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potent than capitalists, social conservatives and left-wing liberals. The ANC’s mission was hardly complete. By appealing to the still fresh legal success of the non-racial, non-doctrinaire, largely civil rights movement, at a moment when his popularity was never higher, Mandela should be read as attempting to influence the United States into bringing to bear as much pressure on apartheid South Africa to negotiate and to capitulate as soon as possible.

<sup>176</sup> S Kikeri 'An Incomplete Transition: Overcoming the Legacy of Exclusion in South Africa Corporate Governance in South African State-Owned Enterprises' *World Bank* (2018).

<sup>177</sup> H Bhorat, K Naidoo & K Pillay 'South Africa’s Civil Servants are the Country’s New Labour Elite' *The Conversation* (19 February 2016), accessed at <https://theconversation.com/south-africas-civil-servants-are-the-countrys-new-labour-elite-54269>.

<sup>178</sup> A Kerr & M Wittenberg 'Public Sector Wages and Employment in South Africa' *Southern Africa Labour and Development Research Unit, University of Cape Town, Working Paper 214* (2017).

<sup>179</sup> In the fiscal year ending in February 2020, 'the South African government ... [spent] ... around 629 billion rand ... on public sector wages'. 'EXPLAINER-Why South Africa’s Public Wage Bill is a Problem' *Reuters* (27 February 2020), accessed at <https://www.reuters.com/article/safrica-economy-wages/explainer-why-south-africas-public-wage-bill-is-a-problem-idUSL5N2AR33A>.

<sup>180</sup> *ibid.*

<sup>181</sup> That’s an extraordinary portion of a public wage bill that stood at roughly R690 billion for fiscal year 2020/21. 'Why SA’s Public Wage Bill is Such a Nightmare for the Treasury' *IOL News* (28 October 2020), accessed at <https://www.iol.co.za/news/politics/why-sas-public-wage-bill-is-such-a-nightmare-for-the-treasury>. Whether a mix of wage cuts and early retirements would meet such a figure is one question. The bigger question is whether COSATU and other unions that support the government would accept such reductions. However, it reflects a sad fact about South Africa – it’s broke.

However, it's important to be clear about what is meant by a failure to bring to book those parties who have engaged in corruption and maladministration. 'State capture' often describes the vast patronage system in which insiders and outsiders have used the apparatus of state structures for personal pecuniary interest over the past two decades.<sup>182</sup> If one pulls back the lens, then the arrangement seems like little more than a natural continuation of South Africa's apartheid-era political economy, with a few new players.<sup>183</sup>

However, its pernicious effects go far beyond the mere weakening of government institutions through erosion of trust. The rot has placed the continued viability of essential or core state structures at grave risk.<sup>184</sup> Should these core structures – primarily SOEs – fail, they have the capacity to take the rest of the economy down with them.<sup>185</sup> Indeed, according to Moody's, embattled SOEs are South Africa's biggest and most dangerous economic stumbling blocks.<sup>186</sup>

<sup>182</sup> See Office of the Public Protector, South Africa *State of Capture: Report on an Investigation into Alleged Improper and Unethical Conduct by the President and Other State Functionaries relating to Alleged Improper Relationships and Involvement of the Gupta Family in the Removal and Appointment of Ministers and Directors of State Owned Enterprises resulting in Improper and Possibly Corrupt Award of State Contracts and Benefits to the Gupta Family Businesses* (14 February 2016) ('State of Capture Report'). See also *Judicial Commission of Inquiry into Allegations of State Capture, Corruption and Fraud in the Public Sector including Organs of State* Government Gazette No 41403 (9 February 2018); Office of the Public Protector, South Africa *Secure in Comfort: Public Protector's Report on Nkandla: Report by the Public Protector on an Investigation into Allegations of Impropriety relating to the Installation and Implementation of Security Measures by the Department of Public Works at and in respect of the Private Residence of President Jacob Zuma at Nkandla in the Kwa-Zulu Province* Report No: 25 of 2013/4 (19 March 2014); *Economic Freedom Fighters v Speaker of the National Assembly; Democratic Alliance v Speaker of the National Assembly* [2016] ZACC 11, 2016 (3) SA 580 (CC); *South African Broadcasting Corporation v Democratic Alliance* [2015] ZASCA 156, 2016 (2) SA 522 (SCA); S Woolman 'A Politics of Accountability: How South Africa's Judicial Recognition of the Binding Legal Effect of the Public Protector's Recommendations Had a Catalysing Effect that Brought Down a President' (2018) 8 *Constitutional Court Review* 153.

<sup>183</sup> T Petersen 'One Author Has Said the Apartheid Government Left a "Blueprint" for State Capture' (2017) *Mail & Guardian* (8 November 2017), accessed at <https://mg.co.za/article/2017-11-08-one-author-has-said-apartheid-government-left-a-blueprint-for-state-capture>. While hardly the only author to make this particular connection between state and society, Pieter-Louis Myburgh has done so in detail. PL Myburgh *Republic of Gupta: A Story of State Capture* (2017).

<sup>184</sup> M Mtshali *Policy Analysis of State-Owned Enterprises: The Case Study of South African National Road Agency Limited (Sanral)* (University of KwaZulu-Natal, 2016).

<sup>185</sup> S Kikeri 'An Incomplete Transition: Overcoming the Legacy of Exclusion in South Africa Corporate Governance in South African State-Owned Enterprises' *World Bank* (2018).

<sup>186</sup> J Cronje 'Moody's Cuts South Africa's Credit Rating to Junk' *Fin24* (27 March 2020), accessed at <http://www.fin24.com/Economy/just-in-moodys-cuts-south-africas-credit-rating-to-junk>. Moody's cut South Africa's sovereign credit rating to sub-investment grade. As a result, the country now has a junk rating from all three major international rating agencies. Fitch and Standard & Poor's downgraded South Africa in 2017. Moody's and Fitch then downgraded South Africa again in 2020 amidst growing concerns about the contraction of the fiscus and questions regarding whether the country's leadership could turn things around without the money for basic services or the ability to do what is necessary to service SOE and other public sector generated debt. 'Fitch, Moody's cut South Africa's ratings deeper into junk, S&P affirms' *Reuters/Times of India* (19 November 2020) accessed at <https://economictimes.indiatimes.com/news/international/business/fitch-moodys-cut-south-africas-ratings-deeper-into-junk-sp-affirms/>. See also L Daniels 'The Biggest Threat to South Africa's Economy: Can Public Enterprises Minister Pravin Gordhan Turn It All Around?' *The South African* (14 September 2018). See also T Malaudzi 'Eskom Warns Citizens to Prepare for Loadshedding' *Eyewitness News* (3 December 2018).

Of the 715 SOEs, the 20 largest find themselves in varying degrees of extreme fiscal distress. Eskom, with a staggering R500 billion in debt and over R20 billion in irregular expenditure and ongoing bailouts (the most recent bailout of R33 billion came in March 2020) has had its request for a R100 billion debt swap rejected by the government. However, aside from deploying more competent employees to strategic positions, it's not clear what the Department of Public Enterprises and the government writ large can do. Eskom supplies 95% of South Africa's electricity. Yet, in a country that literally sits on a mountain of coal, the company was obliged to admit that not only had its coal reserves dwindled and are of poor quality as a result of dodgy tenders; its infrastructure had crumbled due to extremely poor management over a lengthy period of time. The result is regular loadshedding that has retarded growth, put many businesses in jeopardy and negatively affected all households. That the CEO of Eskom has publicly stated that the likelihood of a failure of the entire grid is rather small provides little solace. Indeed, it suggests how close to the precipice of collapse South Africa already was in 2019. However, the most immediate danger that Eskom poses is not a (mis)management matter regarding the delivery of electricity. The stability of the entire financial system may turn on the debt itself. In the last half of 2019, as Marianne Marten noted:

[The Special Appropriation Bill scraped] together R59-billion extra for Eskom – that's in addition to the R23 billion a year already announced in February's Budget– to ensure the power utility keeps its lights on ... Eskom's funding plan is dependent on raising additional funds from the markets, which requires them to be a going concern. 'This extra funding addresses going-concern status,' said Finance Minister Tito Mboweni, adding later: 'Without our support, the company (Eskom) will be unable to meet its financial obligations.' If Eskom fails to meet its obligations, including servicing its R450-billion debt of which R350-billion is government guaranteed, it triggers immediate repayment, and could also lead to a cross-call-in of the debt of other state-owned entities such as SAA, the South African National Roads Agency (Sanral) and Denel. It came very close to that at the end of March 2019 when Mboweni had to invoke the emergency provisions of the Public Finance Management Act to ensure the power utility had the cash to meet its obligations. 'Eskom presents the biggest risk to the financial fiscal framework because of its financial difficulties and its negative impact on the lives of ordinary South Africans,' said Mboweni on Tuesday in his statement to the House on the Special Appropriation Bill. 'Given the high risks of a systemic failure if Eskom were to collapse, government is urgently working on stabilising the utility, while developing a broad strategy for its future.'<sup>187</sup>

Thus far, the government's plans have failed to stabilise the utility. In light of the inconsistency of government support and the worsening ability of the utility to repay its debt without such sustenance, Fitch downgraded Eskom's stand-alone credit profile one-notch to a junk rating of ccc- from ccc on 1 October 2019. Fitch went so far as to state that Eskom's 'poor liquidity and high debt levels are the worst among its peers.'<sup>188</sup> It's hard to say how Eskom will meet its various commitments given the current COVID-19 induced crisis. And just as one felt obliged to say that an economy already on tilt cannot

<sup>187</sup> M Merten 'Eskom's Extra R59bn: SA Running Out of Money as the SOE Paralysis Continues' *Daily Maverick* (24 July 2019), accessed at <https://www.dailymaverick.co.za/article/2019-07-24-eskoms-extra-r59bn-sa-running-out-of-money-as-the-soe-paralysis-continues/> <https://www.dailymaverick.co.za/article/2019-07-24-eskoms-extra-r59bn-sa-running-out-of-money-as-the-soe-paralysis-continues/>.

<sup>188</sup> V Wessels 'Eskom's Credit Rating Cut Deeper into Junk' *Fin24* (1 October 2020), accessed at <https://www.fin24.com/Economy/South-Africa/eskoms-credit-rating-cut-deeper-into-junk-20191001>.

afford further self-inflicted damage, Eskom announced that loadshedding would start again in July 2020 and continue for a year through next winter and possibly to the end of 2021. Eskom also admitted in July 2020, what we already knew: namely that, the tubing and boilers used at Medupi and Kusile have continually failed because the standards employed for their construction were (knowingly) inconsistent with South Africa low quality coal. That news came as cold comfort to many South Africans waiting out the first COVID-19 surge of 2020 without heat (or food).<sup>189</sup> Put it all together, and as Juan Rooste wrote at the beginning of November 2020:

It's difficult to see how Eskom will continue as a going concern without enormous tariff increases despite the government's huge capital-injection optimism being sold to us by Minister Pravin Gordhan and Eskom CEO André de Ruyter. Eskom posted a staggering R20.5-billion loss for the year to March, driven by finance charges of R31.2-billion. Eskom's results announcement comes on the heels of another in July, when Finance Minister Tito Mboweni announced that government would increase financial assistance to Eskom for the current financial year from R23-billion to R49-billion and from R23-billion to R59-billion for the 2020/21 financial years.<sup>190</sup>

Eskom may be South Africa's biggest state-owned disaster. However, Transnet, South African Airways (SAA), the South African Broadcasting Corporation (SABC), the Passenger Rail Agency of South Africa (PRASA) and a broad array of other SOEs are giving Eskom a run for its money when it comes to managerial incompetence, insurmountable debt and the kind of political paralysis that suggests that no one should expect turnarounds of these entities any time soon.

SAA has required ongoing bailouts in the tens of billions of rand over the last 25 years. But the last few years take the cake. After months of stalling, SAA produced documents to its Parliamentary oversight committee in 2019 that demonstrated that it had lost over R10.4 billion (\$700 million) in the past two financial years.<sup>191</sup> At the same time, SAA's efforts to bring costs under control by retrenching 900 workers were met by the threat of impending strikes and the concomitant cancellations of several flights – and that's before any significant industrial action had taken place.<sup>192</sup> To counter such threats, then Finance Minister Pravin Gordhan suggested that the government lacked the funds to pay salaries in November and December 2020.<sup>193</sup>

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<sup>189</sup> 'Eskom CEO: Higher Risk of Loadshedding in 2020 – As 32km of Boiler Tubing Removed from Medupi Unit' *Business Insider SA* (10 July 2020), accessed at <https://www.businessinsider.co.za/eskom-higher-risk-of-load-shedding-2020-7>. Eskom CEO warns that there is a higher risk of loadshedding in the next year, until the end of winter 2021.

<sup>190</sup> R Jooste 'Eskom's Quandary – Loadshedding or Crippling Charges?' *Daily Maverick* (1 November 2020), accessed at <https://www.dailymaverick.co.za/article/2020-11-01-eskoms-quandary-load-shedding-or-crippling-charges/>.

<sup>191</sup> 'SAA Lost over 700 Million Rand in the Past Two Years' *Reuters* (2 December 2019), accessed at <https://www.dailymaverick.co.za/article/2019-12-02-south-african-airways-lost-over-700-mln-in-past-2-years-documents/>.

<sup>192</sup> E Stoddard 'Brinkmanship as SAA and Unions Head for Showdown in Latest Ailing SOE Scrap' *Business Maverick* (14 November 2019), <https://www.dailymaverick.co.za/article/2019-11-14-brinkmanship-as-saa-and-unions-head-for-showdown-in-latest-ailing-soe-scrap/>.

<sup>193</sup> 'Gordhan Says SAA May Have No Money to Pay Salaries this Month' *Polity* (20 November 2019), accessed at <https://www.polity.org.za/article/gordhan-says-saa-may-have-no-money-for-salaries-this-month-2019-11-20>.

SAA has now truly entered the land of ‘first time a tragedy, second time a farce’.

COVID-19 made the government’s threats superfluous. International flights were cancelled prior to the (26 March) lockdown on 21 March 2020. SAA was entirely shuttered save for a few truly patriotic repatriation flights. With international leisure flights last on the list of Lockdown Level 1 businesses to be reopened – and with the height of South Africa’s spike in COVID-19 arriving in August 2020 (and continuing unabated) – it’s hard to imagine the resurrection of SAA’s operations. The best outcome would be a new venture that is largely privately owned.<sup>194</sup> Until the end of September 2020, all flights – domestic and international – remain grounded.<sup>195</sup>

It’s ‘easy’ to say that the country does not require a national carrier. Yet this national carrier employs over 10 000 people. Again: Employees in the formal sector of South Africa’s bifurcated economy often each carry over 20 family members. As unemployment levels rise during the COVID-19 pandemic, the number of family members carried by workers in the formal sector could increase to 30. Thus, even for a non-essential SOE, the stakes of failure are quite high. The government would have done well to consider the only offer on the table. Because as this book goes to bed, SAA is still dead.<sup>196</sup>

Political paralysis has plagued efforts to turn around SAA almost as much as it has Eskom. Joined at the hip, unions under COSATU’s umbrella and the ANC have displayed great difficulty separating the pecuniary interests of union members from both the political interests of the governing alliance and wellbeing of the country as a whole. But not even political paralysis could prevent the placement of the nation’s airline in ‘business rescue’ on 5 December 2019.<sup>197</sup> That status has not changed. Whether this move, and the subsequent shuttering of the airline just prior to the COVID-19 Level 5 Lockdown on 26 March 2020, enables the carrier to be transformed into a viable public-private venture will have to await the construction of new international travel norms. Given the limited ventilation on long hauls, and the 25% of South Africans deemed to have had COVID-19 through August 2020, the second wave that has outstripped the first wave by the end of December 2020, one can expect international tourism to remain depressed for the foreseeable future. As for international business – virtual Zoom and Microsoft Team meetings have become the new normal.

<sup>194</sup> C Smith ‘Airlink Ready to Make “new SAA” Deal ... If It Makes Sense’ *Fin24* (6 May 2020), accessed at <https://www.fin24.com/Companies/Industrial/airlink-ready-to-make-new-saa-deal-if-it-makes-sense-20200506-2>: ‘According to Airlink CEO Rodger Foster, “making sense” would mean an airline that can run on commercial principles and proper governance, and without political interference.’

<sup>195</sup> ‘South African Airways Operations Update during COVID-19’ *SAA Bulletin* (2 September 2020), accessed at <https://www.flysaa.com/flight-suspension-policy>.

<sup>196</sup> ‘South African Airways Operations Update’ *FlySAA* (28 December 2020), accessed at <https://www.flysaa.com/flight-suspension-policy>. Although trans-national commercial air travel is permissible under Lockdown Level 1, it is however conditional as many countries battle with fluctuating infection rates. As of December 2020, this meant that all SAA operated flights (domestic and regional) were suspended until the end of January 2021 and all international flights until the end of February 2021.

<sup>197</sup> M Merten ‘R4bn and Business Rescue to Put Wind Beneath SAA’s Wings’ *Daily Maverick* (5 December 2019), accessed at <https://www.dailymaverick.co.za/article/2019-12-05-saa-in-emergency-landing>. See also ‘Solidarity Says SAA Nearing Total Collapse and Wants It Placed in Business Rescue’ *Polity* (21 December 2019), accessed at <https://www.polity.org.za/article/solidarity-says-saa-nearing-total-collapse-wants-it-placed-in-business-rescue-2019-11-21>.

COVID-19 has also dramatically shifted the dynamics of running the government – when it runs.

So ... Finance Minister Mboweni has now stated that a COVID-19 fiscus – which cannot effectively feed the nation – can ill afford to rescue SAA. In his new guise as Public Enterprise Minister in September 2020, Pravin Gordhan says that we must. It's difficult to wrap one's head around that volte face. Unfortunately, it reflects both the riven state of our ruling party and its inability to govern – as well as the 'broken(ness)' as Marianne Marten would say of our SOEs.<sup>198</sup>

It gets worse. SAA has sold off most of its fleet<sup>199</sup> – and is no longer in a position to engage in moderate- to long-haul flights. As it turns out, the only airline that has proved willing to save SAA is Ethiopian Airlines:

While South African Airways has been losing money for about a decade, things finally took a turn for the worse in December 2019, when the airline entered business rescue. This is a procedure by which practitioners took control of the airline, with the goal of maximizing its odds of survival, or at a minimum achieving a better return for creditors than outright liquidating. Then the coronavirus pandemic more or less shut down global aviation, which made SAA's situation even more dire. The airline has more or less suspended operations, and has gotten rid of most of its planes. The country has been looking for private investors, but unsurprisingly, there hasn't been much interest. After all, anyone interested in investing in an airline in South Africa would be better off starting from scratch. Ethiopian Airlines is willing to help. Ethiopian Airlines is by far Africa's most successful mega-airline. Ethiopian Airlines is offering South African Airways planes, pilots, and maintenance, in order to help the airline get back off the ground. However, Ethiopian isn't willing to invest any cash beyond that, understandably. As Ethiopian Airlines' CEO describes it: 'We don't want to deal with the legacy issues – the debt, labor claims and so on because that is very difficult for us not only in terms of financial outlay but also in terms of managing the restructuring. We want to make it very easy for them to start the airline by providing airplanes, by providing expertise, pilots, technicians, leadership.'<sup>200</sup>

Without a viable fleet of aircraft, any talk of the resuscitation of SAA is just that – talk. If jobs were to be saved, it would have been under an Ethiopian Airlines banner. However, at the end of December 2020, SAA is not only still dead but the government continues to bail it out.

In November 2019, the Passenger Rail Agency of South Africa (PRASA) dismissed over 3 000 security guards and left October 2019 salaries unpaid.<sup>201</sup> In addition, over 10

<sup>198</sup> A month later, and under party pressure, Mboweni switched his tune. 'Mboweni Agrees to SAA's R10.5bn Bailout; No Funds for SABC, Post Office and Denel' *Polity* (28 October 2020), accessed at <https://www.polity.org.za/article/mboweni-agrees-to-saas-r105bn-bailout-no-funds-for-sabc-post-office-and-denel-2020-10-28>. An insolvent South African Airways – with only one-third of its previous fleet – will receive R10.5 billion to fund its business rescue process. This money will simply be diverted from national departments and their entities as well as reductions from local and provincial conditional grants – money that might actually still do some work. This three-card monte decision – dictated by alliance partners – is also inconsistent with Letter of Intent that Mboweni signed with the IMF.

<sup>199</sup> C Koen 'SAA Has only Five Planes Left ... How Will It Fly?' *Business News* (24 July 2020), accessed at <https://citizen.co.za/business/business-news/2328247/saa-has-only-five-planes-left-how-will-it-fly/>.

<sup>200</sup> 'Ethiopian Airlines Offers Planes & Pilots to South African Airways' *One Mile at a Time* (6 October 2020), accessed at <https://onemileatime.com/ethiopian-airlines-south-africa/>. In the midst of a full scale civil war with Eritrea in late 2020, not even Ethiopia is likely to have the money or the will for such a deal.

<sup>201</sup> S Mantshantsha 'PRASA Meltdown Likely to Derail 10,000 Jobs' *Business Maverick* (15 November 2019),

000 further job cuts can be directly linked to PRASA's crash, 'as maintenance companies and components suppliers close shop'.<sup>202</sup> Thirteen thousand job losses could have negative consequences for upwards of 300 000 South Africans. Worse still, the overt theft of cable in and around Johannesburg forced PRASA to suspend operations entirely in September 2020, leaving tens of thousands of passengers stranded.<sup>203</sup> That's truly life at the periphery.

Similarly, the SABC has announced annual losses close to R500 million per annum – a clear function of corruption, maladministration and lack of oversight.<sup>204</sup> Yet again, with roughly 3 500 permanent employees, potential retrenchment at SABC comes with an extremely high human cost, including outright rebellion against the government.<sup>205</sup> As for Transnet, it occupies a space that more closely approximates Eskom.<sup>206</sup> Containing costs for transport are essential for both exports and domestic markets. However, inefficiencies and corruption, when combined with unattractive pricing policies and delays in the ports and rail network, have negatively affected trade.<sup>207</sup>

State-owned enterprises and public sector employment are responsible for the major portion of South Africa's extraordinarily high debt ratio as of 2020/2021, and will continue (unless such core costs are controlled) to push the debt ratio toward truly unsustainable levels (100%) in the very near future. Over the past few years, both Turkey and Brazil have each experienced the adverse consequences of passing this trigger point: namely, a further contraction of the economy and extremely high inflation. The COVID-19 environment makes across-the-board bailouts unlikely. However, shutting down or severely trimming expenditure at the largest SOEs will invariably increase unemployment. The elimination of middle-class jobs – even without automation as a driver – could have a crippling effect on the wellbeing of many extended families. Mcebisi Jonas estimates that one out of every four relatively new middle-class families – many in the public sector – risk falling back into poverty.<sup>208</sup>

There's more to be said about the public sector than the crippling effects of poorly governed SOEs. Of the R880 billion allocated for infrastructure in 2012, a mere R300 billion was spent. R500 billion remained on the table. The state failed to execute projects critical to the growth of the overall economy. When the government committed R100 billion for infrastructure in 2019, private industry adopted a wait and see attitude toward the new allocations.<sup>209</sup> One might be forgiven, in December 2020, for refusing to believe

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accessed at <https://www.dailymaverick.co.za/article/2019-11-15-prasa-meltdown-likely-to-derail-10000-jobs>.

<sup>202</sup> *ibid.*

<sup>203</sup> 'Transnet Condemns Continued Cable Theft in South Africa' *The Bharat News* (27 September 2020), accessed at <https://www.thebharatexpressnews.com/transnet-condemns-continued-cable-theft-in-south-africa/>.

<sup>204</sup> R Rummey 'The Loss Reported by the SABC Goes to the Heart of the Mandated Problems of State-Owned Companies' *Mail & Guardian* (30 September 2016); G Nicholson 'Decoding Hlaudi: The Public Protector's SABC Report' *Daily Maverick* (4 March 2014).

<sup>205</sup> T Cohen 'SABC Staff React in Fury to the News of Retrenchments, but the Corporation's Losses set to Balloon' *Business Maverick* (17 November 2020), accessed at [https://www.dailymaverick.co.za/article/2020-11-17-sabc-signals-losses-of-more-than-r1-billion/?utm\\_medium=email&utm\\_campaign](https://www.dailymaverick.co.za/article/2020-11-17-sabc-signals-losses-of-more-than-r1-billion/?utm_medium=email&utm_campaign).

<sup>206</sup> L Ensor 'Downgrades Fuel the Surge in Transnet's Interest Payments' *Business Day* (15 March 2018); T Niselow 'Transnet Posts Huge Jump in Irregular Expenditure to R8.1 Billion' *Fin24* (20 August 2018).

<sup>207</sup> *ibid.*

<sup>208</sup> M Jonas *After Dawn: Hope after State Capture* (2019).

<sup>209</sup> K Maphatsoe 'Industry Body Welcomes Infrastructure Spend Decision' *Creamer Media's*

that the government will keep its word regarding the creation of new infrastructure projects to jump-start the economy. Indeed, given the 28 December 2020 move to Level 3 and a second COVID-19 wave that dwarfed the first, the state is unlikely to contribute anything (given its already low base) to the much-ballyhooed public-private investment project announced in late 2020. It would be surprising, indeed, if the private sector suddenly followed the state's lead.

### *The private sector*

South Africa's economy contracted by 3.2% in the first three months of 2019, its largest quarterly drop in a decade. While manufacturing, mining and agriculture (inclusive of fishing and forestry) recorded the most significant drops, 8.8%, 10.8%, and 13.2%, respectively, seven of the top ten sectors reported declines in profits.<sup>210</sup> Early reports in the fourth quarter, along with the extreme slow-down caused by Level 6 loadshedding in December (forcing business closures in every sector), resulted in a second straight quarterly contraction, and the second recession in the last two years.

The Ramaphosa presidency may not be on the hook for the structural problems created by the apartheid state and a post-apartheid political economy, or by the Tammany Hall plutocracy of a score of Mbeki-Zuma years. However, despite the irrational exuberance about his ability to turn things around, Cyril Ramaphosa cannot boast of any signal improvement in the very domain in which many expected he would demonstrate leadership. At best, he bought the country time. But after two recessions in two years, his charm and his connection to a signal moment in the country's history did not forestall Moody's determination that South African sovereign credit rating was sub-investment grade in March 2020. Ultimately, the third rating agency's assessments and the COVID-19 crash led to requests for assistance from the Development Bank, the International Monetary Fund and the World Bank – despite ideological battles within the ruling alliance.

With such contractions and downgrades come significant increases in unemployment. Again, the official figure stood hit 30% at the end of 2019. Unemployment amongst youth stood at roughly 50%. The COVID-19 lockdown or restriction period caused the above overall figures to increase dramatically, with overall unemployment reaching 52% and our precariat of youth experiencing similar upticks. While the government finally acknowledged a second wave in December 2020, there's little it can now do. It had its shot to marry public health to economic stimulus and relief – and failed at both. But again, COVID-19 has merely accelerated a pre-existing downward spiral. The second lockdown – announced on 28 December 2020 – may finish off any hope for even the kind of modest rebound experienced during Q3 of 2020.

That the increase in the labour force (average 1.76% per annum) exceeded the increase in employment (average 1.24% per annum) from 2008 to 2016 reflects both a moribund economy and an unsustainable cohort of South Africans who already appear to be permanently unemployable: the new precariat.<sup>211</sup> In an age of accelerating automation

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*Engineering News* (16 August 2019), accessed at <https://www.engineeringnews.co.za/article/industry-body-welcomes-infrastructure-spend-decision-but-still-concerned-2019-08-05>.

<sup>210</sup> African News Agency 'SA Economy Declines by 3.2% in First Quarter of 2019 – StatsSA' *The Citizen* (4 June 2019), accessed at <https://citizen.co.za/business/business-news/2138997/sa-economy-declines-by-3-2-in-first-quarter-of-2019-stats-sa/>.

<sup>211</sup> M Laubscher 'Unskilled Labour in South Africa' *Medium* (2016), accessed at <https://medium.com/@>

and artificial intelligence in which new tasks shift to a more technologically proficient workforce, the number of jobs for unskilled, unskilled workers will only continue to shrink.

The rest of this section assesses the most important segments of South Africa's private sector and the challenges that each must confront in terms of permanent technological unemployment. My initial purpose was to see, in fact, whether between 33% to 50% to 67% of current positions will become redundant – or have their labour task significantly diminished – between now and 2030. COVID-19 has altered that timetable. Given the early numbers in the middle of 2020, it's reasonable to think that we only have half as much time. We will have a better sense of permanent technological unemployment figures once the pandemic has run its course. We can then assess how much permanent damage has been done by the virus, and, as importantly, how much large firms have used the cover of COVID-19 restrictions to supplant human labour with automation and other disruptive technologies.

*The financial sector*

South Africa would appear to punch well above its weight division as a middle-income country when it comes to the financial sector. The Johannesburg Stock Exchange market capitalisation ranked 19th in the world – above that of China, Russia and all but six European stock markets – as late as the end of 2019. It also ended 2019 up 12% on FTSE/JSE All Share Index and 27% on the All Country World Index. By the middle of March of 2020, the JSE had lost 33% of its overall value. The Moody's downgrade and COVID-19 likewise knocked the rand off its hot money perch – where it had long been a steady fifth amongst emerging markets.

It is important to remember, however, that the stock market is not the economy.

One would normally expect a country which has had a high-flying bourse to rank amongst the highest in terms of domestic fixed investment and foreign direct investment.<sup>212</sup> Again – there's no correlation.

Here's the first kicker. According to the United Nations Conference on Trade and Development (UNCTAD), South Africa in 2017 remained the ninth-largest net exporter of foreign direct investment – full stop. Ninth in the world. The amount for what it's worth as of 2017 is \$120.3 billion – or R1.7 trillion. To put that number in perspective, the total outward flow of capital investment from South Africa has been larger than that of Finland, Norway and Ireland combined.

Here's a second kicker. Only the tiny principality of Luxembourg – a big bank on a hill – and the Netherlands – a stable tax haven that works wonderfully for investors from virtually anywhere – have (up until 2020) exported more net foreign direct investment, as a percentage of GDP, than South Africa. Again – not so long ago, we weighed in at 34%.

Okay. What then is the consequence of this lack of commitment? Because our fixed investment – whether domestic or foreign – correlates with job creation (at least since 1967), one conclusion is easily drawn. As Michael Schussler writes:

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erichlaubscher1/unskilled-labour-in-south-africa-af56852ed443.

<sup>212</sup> M Schüssler 'Tragic Data Shows Capital Fleeing Along With Jobs' *MoneyWeb* (16 January 2019), accessed at <https://www.moneyweb.co.za/moneyweb-opinion/soapbox/tragic-data-shows-capital-fleeing-along-with-jobs/>.

Foreign fixed investment is an investment in real companies, buildings, technology, and jobs. The lack of foreign fixed investment translates into real job losses and impoverishes real people by the millions ... Using the average emerging market as a measure (average is taken as 12% of GDP as calculated), SA should have had R2.2 trillion in extra fixed investments by the end of 2017. Measured as a percentage of South Africa's total fixed investment stock of R11.2 trillion ... [the] 20% more capital [that stayed at home] ... would have meant about 3.1 million more jobs. The net foreign investment stock is hard data collected by UNCTAD as well as the South African Reserve Bank ... The R2.2 trillion [in private sector fixed investment trillion] would [have created 4.5 million] in the private sector. [In short] SA would have halved the unemployment numbers from close to 10 million to about five million.<sup>213</sup>

*Five million jobs lost to foreign investment.* That's a staggering figure. Moreover, SOEs, whilst a large employer, have also invested significant sums outside South Africa. The misalignment between our domestic capital investment and our human capital deficits beggars belief. The result is that only *three* of ten adults are employed in the formal sector.<sup>214</sup> (It's four if you then expand the employment sector to embrace domestic workers: hardly a signal victory given their low wages, yet another vestige of colonial and apartheid rule.)

Is there a silver lining in this story? That the JSE that floated between 18th and 19th with respect to market capitalisation, and that the rand as a currency has had the 25th largest turnover, signals something significant about South Africa's current place in the world of finance as of mid-2020. Despite all of this year's bad news, there's the slightest of silver linings. Recall *The Economist's* ranking of South Africa as 47th amongst 66 emerging markets chart found in the Prologue. The country's sole source of financial strength remained its ability to sell government bonds and to secure *somewhat* favourable borrowing terms.

Beyond that, the news has been bad for quite some time. Remember the bullish stock market of 2019 *was not* the economy.

Did we still have a silver lining as 2020 turned into 2021? The effects of the new Level 3 restrictions in December 2020 may cause potential lenders to look even harder at South Africa's leadership and decide whether it can be trusted. Its mendacity about the actual COVID-19 figures, its rule by fiat and its mishandling of the pandemic may cause South Africa to faller further down *The Economist's* next set of rankings.

In February of 2019, State President Cyril Ramaphosa was obliged – after an extraordinary letter by foreign governments expressing concern over corruption – to commit himself to the creation of something akin to the Scorpions. (It's December 2020 – and only a modicum of progress has been made. However, while ex-President Zuma felt comfortable walking out the Zondo Commission's Inquiry into State Capture in November 2020,<sup>215</sup> he has since been obliged to answer all questions put to him by

<sup>213</sup> *ibid.*

<sup>214</sup> South Africa possesses roughly 1 000 sizeable companies in the formal sector. They account for almost 56% of all formal employment. Thus, it becomes particularly worrisome when over one quarter of the big 1 000, – 27% – have sought to reduce their workforce in the past year. N Molla 'South Africa's Big Question: Why Are We Waiting?' *Daily Maverick* (7 August 2019), accessed at <https://www.dailymaverick.co.za/opinionista/2019-08-07-south-africas-big-question-why-are-we-waiting>: 'According to the Commission for Conciliation, Mediation and Arbitration (CCMA), the number of companies approaching the council for retrenchments in the second quarter of this year increased to 185 from 137 last year.'

<sup>215</sup> F Haffajee 'Jacob Zuma: "I Didn't Run Away"' *Daily Maverick* (19 November 2020), accessed at <https://www.dailymaverick.co.za/article/2020-11-19-jacob-zuma-i-didnt-run-away/>.

the commission. The ANC's Secretary-General Ace Magashule seems extremely cheerful for someone with 200 charges of corruption awaiting him.<sup>216</sup> The lack of progress with respect to corruption even led a ruling alliance partner – COSATU – to threaten to go on strike.<sup>217</sup> But that letter alone is not what ultimately spooked investors. A report by Eunomix, dated April 2019, found that

*South Africa's performance on a range of social, economic and governance measures deteriorated more in the past 12 years than any other nation not at war ... The decline is likely to continue as the country wrestles with the consequences of nine years of worsening corruption and policy paralysis under former President Jacob Zuma ... The fragility of the economy may also limit the tenure of his successor Cyril Ramaphosa ... South Africa's decline in ranking is only been superseded by conflict-riven countries such as Mali, Ukraine and Venezuela and its peers now include Colombia, Jamaica, Latvia and the Philippines ... [T]he likelihood of arresting the decline is limited by the unsustainable structure of South Africa's economy, in which economic power is largely held by an elite that wields little political influence, a product of its apartheid history and its status as one of the world's most unequal societies. The ability of politicians to make the unpopular decisions needed to boost growth is hampered by this imbalance. Economic policy serves narrow interests, thus generating insufficient and unfairly allocated growth ... Populism, rather than developmentalism is an easy temptation, with the economy a tug-of-war between mutually distrustful groups.*<sup>218</sup>

The financial sector writ large reflects a seemingly intractable wealth gap, especially given the persistent concerns about South Africa's stability in the face of political paralysis. No subsector within the financial sector reflects these divergent vectors – in this age of permanent technological unemployment – better than the banking sector.<sup>219</sup>

<sup>216</sup> R Poplack 'Ace Magashule, the ANC's Smallanyana Skeleton-General' *Daily Maverick* (14 November 2020), accessed at [https://www.dailymaverick.co.za/article/2020-11-14-ace-magashule-the-ancs-smallanyana-skeleton-general/?utm\\_medium=email&utm\\_campaign=168%20Newspaper%20Edition%20-%20Evolve&utm\\_content](https://www.dailymaverick.co.za/article/2020-11-14-ace-magashule-the-ancs-smallanyana-skeleton-general/?utm_medium=email&utm_campaign=168%20Newspaper%20Edition%20-%20Evolve&utm_content).

<sup>217</sup> S Dhlamini 'The National Union of Mineworkers (NUM) said on Tuesday that It Would Take Part in the Congress of South African Trade Unions' October 7 Strike against Corruption' *Polity* (29 September 2020), accessed at <https://www.polity.org.za/article/num-supports-cosat-strike-against-corruption-2020-09-29>: 'NUM said while it noted efforts from President Cyril Ramaphosa to fight corruption, workers were losing confidence in government's ability to do so.'

<sup>218</sup> A Sguazzin 'South Africa's Decline is Worst among Nations Not at War, Model Shows' *Bloomberg News* (17 April 2019). (Emphasis added)

<sup>219</sup> M Khumalo *How South African Banking Sector Facilitates South African Foreign Direct Investment into Sub-Saharan Africa* (Unpublished MDF Thesis, Stellenbosch University, 2008):

The research ... demonstrates how South African banks ... facilitate South African outward FDI flows into the Sub-Saharan region. A case study illustration in this ... report clearly shows that banks, driven by their own foreign direct investment interests, were simultaneously facilitating and driving non-banking foreign direct investment in the region.

The 'other' more informal and impecunious participants in the economy made only scant and old-fashioned use of the banking sector. M Mafukata 'Adoption and Non-Adoption of Mainstream Formal Banking Systems amongst Low Income Earners in South Africa, Zambia and Zimbabwe' (2015) 4 *International Journal of Finance and Banking Studies* 37:

The majority of income earners of small-scale informal economic sectors in most developing regions of the world do not bank their earnings with mainstream formal banking institutions preferring to 'bank' their income at their homes or not to bank at all ... [For example,] the small income earners of the small-scale informal communal cattle farmers sub-sector in South Africa had 47.2% of its population adopting mainstream formal banking through savings, whereas the majority, 52.8%, did not participate.

Between July 2018 and July 2019, total assets in the sector increased by over 10.7%. Gross loans and advances increased by 8.9%.<sup>220</sup> To put these profits into their proper perspective, Ernest & Young's assessment in March 2019 showed that despite 'a downward spiralling economy', the country's big six banks had recorded high profits in 2018 with a return on equity (ROE) 'at their highest levels since the global financial crisis' of 2009.<sup>221</sup>

At the same time, Standard Bank revealed that it planned to close 91 branches and retrench 1 200 employees.<sup>222</sup> As of August 2019, Nedbank had begun talks regarding the elimination of 1 500 positions. Not surprisingly, SABASCO – the union representing some 73 000 bank employees<sup>223</sup> – called for a day of strikes in late September 2019 to protest the closures and job cuts.<sup>224</sup>

The contemporaneously high profits and significant job cuts follow Acemoglu and Restrepo's powerful explanatory model for permanent technological unemployment outlined in Chapter III. First, not all new technologies amplify the demand for labour. The bank closures reflect a significant degree of automation in the banking sector. Fewer people use actual bank branches. Most financial transactions can be done online or on mobile devices through EFTs. With respect to branch employees, the sizeable displacement effects are unlikely to lead to the expansion of the labour market through the deployments of bank profits elsewhere. There's a significant mismatch between the gains produced by automation, and the skills that the displaced workers possess. *A recent study of the banking sector concluded that the primary causes of tertiary graduate unemployment reflected limited skill sets, the institution attended by graduate, and differences in expectations from employers and graduates.*<sup>225</sup> Secondly, and consistent with Acemoglu and Restrepo's model, labour's share of the banking industry's value is shrinking rather than growing. More precisely, over the last 10 years, the displacement effects created by novel technologies in the banking sector have significantly outstripped reinstatement effects. Thirdly, given that productivity growth continues to be automated in so far as personal and commercial banking is concerned, the relative standing of labour, and its task content of production, will continue to decline.

<sup>220</sup> South African Reserve Bank Prudential Authority 'Selected South African Banking Sector Trends – July 2019' (20 July 2019), accessed at [www.resbank.co.za/Lists/News%20and%20Publications/Attachments/9136/07%20July%202019.pdf](http://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/9136/07%20July%202019.pdf).

<sup>221</sup> *Business Day* TV 'How Did SA's Banks Report Profit in 2018?' (15 March 2019), accessed at <https://www.businesslive.co.za/bd/companies/financial-services/2019-03-15-watch-how-did-sas-banks-report-profit-in-2018>.

<sup>222</sup> As of the end of 2019, banks employed approximately 158 000 people. The Banking Association South Africa 'Annual Report' (2018), accessed at [https://www.banking.org.za/report\\_categories/annual-reports/](https://www.banking.org.za/report_categories/annual-reports/).

<sup>223</sup> Junior management has the largest head count. It had over 64 000 employees in 2017. The proportion who are black increased marginally from 83% in 2016 to 85% in 2017. The Banking Association of South Africa 'Transformation in the Banking Industry 2016-2017' *BASA Transformation Report February 2019* at 17, accessed at <https://www.banking.org.za/wp-content/uploads/2019/04/Transformation-in-Banking-Report-2019.pdf>.

<sup>224</sup> 'Massive Strike in South Africa's Banking Sector is Moving Ahead' *BusinessTech* (20 September 2019), accessed at <https://businesstech.co.za/news/banking/342349/massive-strike-in-south-africas-banking-sector-is-moving-ahead/>. See also M Thamm 'Lucrative Banking Sector Job Cuts Immoral In Economic Climate' *Daily Maverick* (13 August 2019), accessed at <https://www.dailymaverick.co.za/opinionista/2019-08-13-lucrative-banking-sector-job-cuts-immoral-in-economic-climate/>.

<sup>225</sup> F Oluwajodu, D Blaauw, L Greyling & EPJ Kleynhans 'Graduate Unemployment in South Africa: Perspectives from the Banking Sector' (2015) 13 *South African Journal of Human Resource Management* 1.

*The mining sector*

History and diminishing demand have finally caught up with the South African mining sector. Accelerating innovation could be the final nail (for workers) in the industry's coffin.

The discovery of huge deposits of diamonds in the early-to-late 1870s and gold in the mid-1880s shifted England's view of South Africa as primarily a sleepy agricultural outpost to a vital cog in maintaining and extending England's colonial empire. England's ability to exploit South Africa's gold mining industry took various forms. It possessed the oldest and most sophisticated gold market in existence. It had trade routes from Cape Town to London that made its export and its import rather easy. It possessed sophisticated refineries and mints that could turn the raw product into the actual coin of the realm:

[London] with its institutional matrix of insurance, brokerage, Stock exchange, banking ... facilities provided the Witwatersrand mines with financial and other services which were increasingly essential to an industry whose capital formation, credit facilities, purchases of capital goods, recruitment of technical personnel ... were internationally orientated and external to South Africa.<sup>226</sup>

It would, of course, be a mistake to say that England paid the price for South Africa's increasing economic freedom from the crown. Whilst the world remained on the gold standard, it extracted as much wealth from this colony as it could. Nor can one say that the South African economy was truly hurt by its ties to imperial England over the same period: its access to the various economic institutions that served England and its far-flung empire enabled South Africa to become a highly industrialised nation in an extraordinarily brief period of time. The Randlords, and eventually white labour, could hardly be said to have been hard done by.

Indigenous communities paid the price. As Andrew Butler writes, '[d]espite the robustness of African societies in the face of settler competition ... a combination of blunt coercion and pernicious legal and institutional constraints' led to the official demise of the Xhosa and Zulu kingdoms around 1879.<sup>227</sup> Only the Orange Free State and the Transvaal stood in the way. The South African War, waged primarily over gold, began in earnest in 1899. It ended in 1902. The British prevailed.<sup>228</sup>

The conquest of indigenous communities, the disruption of the prevailing ways of life, and the emergence of an extremely sophisticated industrial economy shaped the contours of our still profoundly divided and unequal society. As Etherington, Harries and Mbenga eloquently put it:

The swell of change was carried far beyond the confines of British rule as people adopted new identities more suitable to their changed situation. Race grew into a primary factor of social classification, belonging and exclusion ... the delineation and transcription of languages divided people into ethnic groups that rapidly developed their own values, practices and histories ... in some areas class consciousness grew in importance whereas gender relations, based on the social practices associated with sexual difference, underwent extensive change ... for many, the forced march of progress quickened the rhythm of existence and undermined the stability of an older, more secure world.<sup>229</sup>

<sup>226</sup> R Alley *Gold & Empire: The Bank of England and South Africa's Gold Producers, 1886–1926* (1994).

<sup>227</sup> A Butler *The Idea of the ANC* (2013) 18–19. Butler notes that all organised African military resistance came to end with England's suppression of Bambatha's rebellion in Natal in 1906. *ibid.* at 19.

<sup>228</sup> N Worden *The Making of Modern South Africa: Conquest, Apartheid, Democracy* (5th Edition, 2012).

<sup>229</sup> N Etherington, P Harries & Bernard K. Mbenga 'From Colonial Hegemonies to Imperial Conquest,

In the post-apartheid era, the sector remained dependent upon relatively cheap surplus labour.<sup>230</sup> In the partially deracialised, barely transformed economy of today, labour is no longer slave labour and a formally equal society no longer makes black South African workers entirely disposable. That's not, however, saying very much. The squatter camps alongside mining concessions only grew larger after 1994 as citizens were suddenly free to move to wherever they believed employment might exist. But as the brutal Marikana Massacre of 2012 demonstrates, a lacuna in the political realm continues to exist in the spaces where large-scale mining occurs. Worse still, in addition to absence of public infrastructure, the state has actually engaged in repressive behaviour at the behest of the mining companies.<sup>231</sup>

The Constitutional Court has tried to reset the balance between mining companies and the communities within which their operations are situated. In *Maledu v Itereleng Bakgatla Mineral Resources (Pty) Limited*, the Court held that the Bakgatla Communities lawful occupation of land flowed from protection provided them under the Informal Land Rights Act:

This right still existed notwithstanding the award of the mining right to the respondents. The right was also not consensually terminated by the resolution regarding the surface lease agreement taken at the *kgotha kgothe* (an open community meeting that all adult community members are eligible to attend) of 28 June 2008. This was because there was insufficient evidence to demonstrate that the applicants had had a reasonable opportunity to participate in the business of the *kgotha kgothe* that culminated in the adoption of the resolution in question.<sup>232</sup>

But, as Hermanus and others point out, social and political unrest, and legal contestation of rights, are not the sector's biggest problem:

Falling demand for minerals has led to lower levels of return and reduced interest from investors and lenders, and has brought many longstanding uncertainties and externalities associated with the business of mining into the foreground and into the public eye. These ... uncertainties [turn primarily] around energy supply, the future of fossil fuels, the availability of water [under drought conditions] ... [security of tenure with regard to] to mining land ... and [the deleterious effects] of [mining] on the [environment and society]<sup>233</sup> ... [In addition],

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1840–1880' *Cambridge History of South Africa, Volume I* (2010).

<sup>230</sup> F Wilson *Labour In The South African Gold Mines 1911–1969* (1972); L Platsky & C Walker *The Surplus People. Forced Removals in South Africa* (1985).

<sup>231</sup> G Marinovich *Murder at Small Koppie. The Real Story of South Africa's Marikana Massacre* (2016).

<sup>232</sup> [2018] ZACC 41. In a more recent judgment, the North Gauteng High Court held that communities had the right to see applications for mining licences as part of a consultative arrangement that must precede the granting of such rights. E Ellis 'Game-Changing Xolobeni Judgment Orders Applications for Mining Licences to be Made Public' *Daily Maverick* (14 September 2020), accessed at <https://www.dailymaverick.co.za/article/2020-09-14-game-changing-xolobeni-judgment-orders-applications-for-mining-licences-to-be-made-public/>. See also P Zamchiya *Differentiation and Development: The Case of the Xolobeni Community in the Eastern Cape*, South Africa Institute for Land, Poverty and Agrarian Studies (2019).

<sup>233</sup> M Hermanus 'Mining Redesigned: Innovation and Technology Needs For The Future – A South African Perspective' (2017) 117(8) *Journal of the Southern African Institute of Mining and Metallurgy* 811 citing, amongst others, J Momberg & E Rich *Beyond Governments: Making Collective Governance Work. Lessons from the Extractive Industries Initiative* (2015); M Thondahl *International Development Policy: Energy and Development Graduate Institute of International and Development Studies* (2011); Ernest & Young *Business Risks Facing Mining and Metals 2015–2016: Moving from the Back Seat to Driver's Seat* (2015), accessed at <http://www.ey.com/gl/en/industries/mining--metals/business-risks-inmining-and-metals-old-2>.

extreme automation and connectivity ... have [the] potential to deepen inequality and reduce job security.<sup>234</sup>

With respect to the future, mining companies such as Rio Tinto have already rolled out disruptive innovation designed to achieve greater sustainability through autonomous mining (as well as the autonomous sorting of waste prior to arrival at processing plants), and tunnelling to access deep orebodies *without human assistance*.<sup>235</sup> The near future will feature robotic mining, driverless trucking and autonomous drilling systems. As demand continues to contract, and as social distancing sanctions make deep shaft mining in confined spaces undesirable, the push for automation will accelerate. The precious minerals will return to being precious once economies around the world rebound within the next few years. The availability of jobs, however, may not.

Just five years ago, an estimated 60% of all export revenue flowed from minerals and metals. At the same time, mining's contribution to the South African economy has contracted from a high of 21% in 1980, when the gold price peaked, to 8% in 2015.<sup>236</sup> This half of our plantation society has truly gone to seed. So while the courts have enabled traditional communities to view mining licencing applications prior to a licence being granted, they have not yet succeeded in returning the real value of this still active sector to those communities from whom the land was stolen. As a result of highly leveraged empowerment deals, too little has been done to provide adequate redress to indigenous communities deprived of their land.

A quintessential example of the kind of perfect storm of structural inequality, permanent technological unemployment and political paralysis that leads to large-scale community violence and instability took place subsequent to the closure of Rio Tinto's heavy metal mines in Richard's Bay.<sup>237</sup> The closure affected not only the lives of 1 800 employees and 200 subcontractors. This instance of deindustrialisation ripped through and ripped up the entire community. FEDUSA, the union that represents 410 of the laid-off workers, wrote to Gwede Mantashe, Minister of Mineral and Energy Resources, in an effort to secure government intervention. Mantashe's inauspicious record in the sector bodes ill for these miners and other miners who are currently losing their jobs due to poor infrastructure, social instability, the downturn in demand created by COVID-19 and the lower production costs of automation and other technological advances.

### *The agricultural sector*

We can look at the technological disruption in South Africa's agricultural sector in two different, but potentially beneficial ways. First, new technology can radically increase productivity. Second, new technology can enable small landholders to survive if not

<sup>234</sup> M Hermanus 'Mining Redesign: Innovation and Technology Needs for the Future – A South African Perspective' (2017) 117(8) *Journal of the Southern African Institute of Mining and Metallurgy* 811.

<sup>235</sup> Rio Tinto *Sustainable Development Report 2014: Creating Mutual Value for the Long Term* (2014), accessed at [http://www.riotinto.com/documents/RT\\_SD\\_report\\_2014.pdf](http://www.riotinto.com/documents/RT_SD_report_2014.pdf). See also *Rio Tinto The Mine of the Future and Next Generation Mining: People and Technology Working Together* (2015), accessed at [https://www.youtube.com/watch?v=9I\\_EbGLltyY](https://www.youtube.com/watch?v=9I_EbGLltyY).

<sup>236</sup> 'Gold Prices' *StatsSA* (2016).

<sup>237</sup> J Brown 'Union Calls on Minister to Step in at Violence-Hit Richards Bay' *Minerals Business Maverick* (8 December 2019), accessed at <https://www.dailymaverick.co.za/article/2019-12-08-union-calls-on-minister-to-step-in-at-violence-hit-richards-bay-minerals>.

flourish. Novel technology possesses genuine promise. The two elephants in the room, however, are land reform and drought. It remains to be seen whether the two elephants will suck the life out of our collective watering hole. Here, it must be noted, is an instance where politics – as much as technology – constitutes a barrier to a successful shift from the forms of subsistence farming that leaves many South Africans living below the extreme poverty line of \$1.9/day to a form of farming that enables them to flourish.

Let's begin then with the desirability of farming as a means of living. In sub-Saharan Africa, roughly 80% of the poor 'choose' agriculture as a form of employment. That figure is far higher than the percentage employed in other developing countries or emerging markets. Why might that be so in South Africa? COSATU. Until recently, the notion of a minimum wage was anathema to the unions, and thus to the policies of the tripartite alliance. With a limit on skilled working-class employment, and an effective bar on low wage/minimum wage manufacturing jobs, a majority of South Africans have been locked into agriculture or farming.<sup>238</sup>

South Africa is not alone in this regard. As Timmer and his colleagues note, between 1975 and 2005, sub-Saharan Africa has experienced significant deindustrialisation. In his words: 'the sophistication of the manufacturing sector in 16 of the 18 African economies in the United Nations Industrial Development Organization (UNIDO) database declined relative to predicted values.'<sup>239</sup> What causes both deindustrialisation and an over-reliance on agriculture? Across the continent, farmers experience a misalignment between the requisite financial resources and competitive technology – from fertiliser, to mechanisation, to water management – required to lift themselves above subsistence farming.<sup>240</sup> The mismanagement of human capital, resources and technology generates a 40% difference in per capita income between developing countries in sub-Saharan Africa and the rest of the developing world.<sup>241</sup> Once we take into account the limits on alternative employment, it makes sense – as Gollin, Lagakos and Waugh note<sup>242</sup> – that labourers self-select into agriculture irrespective of the misalignment between their skills (which could be better used elsewhere) and the return on their labour. Meeting a family's subsistence food consumption requirements beats the alternative.

<sup>238</sup> W Naudé 'Entrepreneurship and the Reallocation of African Farmers' (2016) 55 *Agrekon: Agricultural Economics Research, Policy and Practice in Southern Africa* 1.

<sup>239</sup> M Timmer, A Erumban, B Los, R Stehrer & G de Vries 'Slicing Up Global Value Chains' (2014) 28 *Journal of Economic Perspectives* 99. Timmer and company conclude that structural change in Africa has resulted in 'de-industrialization in terms of a falling share of manufacturing in GDP since the mid-1970s'. Page (2013, 5) notes that between 1975 and 2005 'the sophistication of the manufacturing sector in 16 of the 18 African economies in the UNIDO database declined relative to predicted values'. *ibid.* citing UNCTAD Global Value Chains: Investment and Trade for Development (2013), accessed at [http://unctad.org/en/PublicationChapters/wir2013ch4\\_en.pdf](http://unctad.org/en/PublicationChapters/wir2013ch4_en.pdf).

<sup>240</sup> S Haggblade 'Unscrambling Africa: Regional Requirements for Achieving Food Security' (2013) 31 *Development Policy Review* 149.

<sup>241</sup> O Galor, O Moav & D Vollrath 'Inequality in Landownership, the Emergence of Human-Capital Promoting Institutions, and the Great Divergence' (2009) 76 *Review of Economic Studies*, 143. The acceleration of technology and a mismatch in human (and economic) capital has led to the decimation of farming communities in many developed economies.

<sup>242</sup> D Gollin, D Lagakos & M Waugh 'The Agricultural Productivity Gap' (2014) 129 *Quarterly Journal of Economics* 939.

Could modern technology provide the answer? Maybe. Only maybe, with the odds against. Dlodlo and Kalezhi first note the benefits of novel agricultural technology and then identify those economies that have benefitted the most from automation and robotics:

Agricultural mechanisation [already] minimises drudgery which hitherto makes it difficult or rather impossible to achieve or practise large-scale food and agricultural production. Maintaining improved competitiveness, low consumer price, increasing agricultural and food production while at the same time improving labour productivity on-farm can only be achieved through effective agricultural mechanisation that goes beyond the application of tools and power machinery to the application of automation, control and robotics ... Automation, image sensing and the use of robotics have been applied to on-farm machines and equipment such as rotary cultivators, tractors, threshers, combine harvesters, on-farm dryers, cyclonic rice husk furnaces and storage silos in most parts of Europe and America. Many countries in the above regions have applied these advanced technologies in the mechanisation of large-scale agricultural fields.<sup>243</sup>

However, South Africa – between unskilled and low-skilled workers,<sup>244</sup> agriculture-killing drought, the absence of a coherent government policy and the renewed contestation over land – faces severe limits in terms of the successful uptake of present-day technologies.<sup>245</sup> It need not be this way. As Dlodlo and Kalezhi note:

[A]bundant arable land for large-scale production [is possible where] ... available land resources [are] estimated to be above 80% [in countries such as] Nigeria and South Africa. However, less than half of the available agricultural land [in these countries] is currently used for large-scale farming.<sup>246</sup>

Of course, available land is one thing. Available *arable* land is another. As we discovered in Chapter II, droughts in the Eastern Cape, the Western Cape and other provinces in South Africa make profitable use of available land for agriculture more than a dicey proposition.

Onwude, Abdulstter, Gomes and Hashim place a range of additional conditions on South Africa's ability to create a land and agriculture policy in which the broader population will see benefits from novel technologies:

Mechanisation of large-scale agricultural fields often requires the application of modern technologies such as mechanical power, automation, control and robotics. These technologies are generally associated with relatively well developed economies. The application of these technologies in some developing countries in Africa and Asia is limited by factors such as technology compatibility with the environment, availability of resources to facilitate the technology adoption, cost of technology purchase, government policies, adequacy of

<sup>243</sup> N Dlodlo & J Kalezhi 'The Internet of Things in Agriculture for Sustainable Rural Development' Council for Scientific and Industrial Research Meraka Institute (2018). These technologies encompass the use of embedded computing, robotics, wireless technology, GNSS/GIS (Global Navigation Satellite System/ Geographical Information System) and DBMS (Database Management System) software.

<sup>244</sup> According to Cousins, '[A]griculture employs 4.75 million South Africans of which 4 million are engaged in agriculture for "own consumption" purposes.' B Cousins 'What is a Smallholder? Class Analytic Perspectives on Small-Scale Farming and Agrarian Reform in South Africa' *PLAAS Working Paper 16* (2009), accessed at <http://www.plaas.org.za/pub2/downloads/wp16>. Cousins notes that

90% of smallholder crop production in ... in South Africa is rain-fed, so rainfall is a critical factor for selecting crops, their planting time, the timing and intensity of input and labour use and subsequent yields. Under the severe drought conditions that South Africa has experienced over the last decade, smallholder crop production has been severely constrained. Indeed, weather patterns have changed South Africa from a net exporter of food to a significant importer of food.

<sup>245</sup> N Dlodlo & J Kalezhi (2018).

<sup>246</sup> *ibid.*

technology and appropriateness in addressing the needs of the population. As a result, many of the available resources have been used inadequately by farmers, who continue to rely mostly on conventional means of agricultural production.<sup>247</sup>

For South Africa's agricultural sector to succeed, it requires large-scale-agricultural farm mechanisation that generates sustainable food production and is anchored in a coherent strategy based on the actual needs and priorities of the large-scale farmer. Only once such success has been realised can the benefits of novel technologies be genuinely shared.<sup>248</sup>

Indeed, despite the uncertainty surrounding land tenure, the agricultural sector is starting to spend more on advanced technology to reduce operating costs.<sup>249</sup> As with mining, advanced technology could have a two-fold effect on employment. As Megbowon, Ojo and Olasehinde contend, automation and novel agricultural processes will certainly eliminate a large number of unskilled labour positions.<sup>250</sup> That's just one *intended* purpose of using advanced technology. However, savings on unskilled labour should create higher paying employment for personnel required to work with new machinery or to implement more sophisticated forms of farming. Although an overall loss in employment will occur in the sector, increased wages will flow from the use of novel technology and business models. Megbowon, Ojo and Olasehinde identify a second effect: 'While ... [the] agro-processing sector output is found to be unable to promote agricultural sector employment, this study [suggests that enhanced production will] stimulat[e] agricultural export for agricultural sector employment generation in South Africa.'<sup>251</sup> In short, although advanced agricultural

<sup>247</sup> D Onwude, R Abdulster, C Gomes & N Hashim 'Mechanisation of Large-Scale Agricultural Fields in Developing Countries – A Review' (2016) 96 *Journal of the Science of Food and Agriculture* 396, accessed at <https://doi.org/10.1002/jsfa.7699>.

<sup>248</sup> Small-scale artisans share similar difficulties and constraints. A Wildschut & T Meyer 'Why Changes to Occupational Domains Matter for Artisanal Skills Planning in South Africa, *Labour Market Intelligence Partnership Policy Brief 18* (2016). Wildschut and Meyer note how significantly the artisanal market has been altered and the extent to which it has become far more demanding:

The environments in which artisans now practice their trades are placing at least two noticeable demands on artisan skillsets. Our evidence suggests that skills requirements for artisans are perceived to have *expanded*. This means that there is an expectation by employers that artisans should have more generic skills, including those not traditionally associated with artisanal work. Three clear examples emerged: (1) Artisans are increasingly required to plan their work in relation to daily, weekly and monthly schedules; (2) Artisans need to organise and manage their time in relation to the work of other occupational groups; (3) Artisans are required to identify, financially plan for, and procure parts required for maintenance and breakdown-related tasks; (4) Artisans are required to compile and present breakdown reports (within a team setting) as well as handover reports upon completion of shifts.

*ibid.* at 2. Unskilled and low-skilled workers with limited education and limited access to the capital required to maintain stock, to keep books, to create supply chains, and write coherent reports face significant challenges. South Africa's system of basic education – from primary schools through secondary schools – rarely offer graduates or non-graduates the skills that they need to succeed in a more demanding environment.

<sup>249</sup> D Parker 'Agriculture Sector Driven to Spend More Upfront on Innovation' *Creamer Media's Engineering News* (9 August 2019), accessed at <https://www.engineeringnews.co.za/article/agriculture-sector-driven-to-spend-more-upfront-on-innovation-2019-08-09>.

<sup>250</sup> E T Megbowon, O S Ojo & T J Olasehinde 'Agro-processing Output and Agricultural Sector Employment: Evidence from South Africa' (2017) 13(2) *Acta Universitas Danubius: Oeconomica* 174. This paper empirically examines the relationship between agro-processing sub-sector output and agricultural sector employment in South Africa by using time series data from 1975–2015.

<sup>251</sup> *ibid.*

technology will depress employment in the sector, it will increase export opportunities (and should lower prices domestically).

Increased agricultural exports will increase employment in the agricultural export sector. As with mining, the sector as a whole will experience a net employment loss. However, the new jobs created in the two domains identified above and the expansion of the agricultural sector as a result of new technology could enhance food production and, potentially, return South Africa to a position of being a net exporter of food and a breadbasket for the continent. Increased productivity means more taxes on agricultural products and a contribution to a fiscus under immense stress. A significant contribution to the fiscus would be a win-win. To some that may sound like trickle-down economics. It's not.

South Africa has a choice. It can catch up with agricultural innovations or it can continue to be a net importer of cheap foodstuffs and face a contracting agricultural sector.<sup>252</sup> In understanding ongoing contraction in this sector, we need to return to several issues raised in Chapter II on wicked problems, especially climate change.

Lekunze's analysis of the use of renewable energy resources to enhance agricultural production naturally takes note of the country's dependence on electricity produced by Eskom and a legislative framework that still inhibits the use of renewable energy.<sup>253</sup> Lekunze writes that new '[l]egislation is vital in reducing energy consumption in the agricultural sector.'<sup>254</sup>

As of late 2020 (over two and a half years after Lekunze's interventions), the government has yet to figure out how to eliminate South Africa's dependence on dirty coal.<sup>255</sup> While South Africa passed a new IRP in October 2019, the Integrated Resource Plan for Electricity leaves a lot to be desired. According to Wright, Calitz, Fourie, Ruan and Chiloane:

The Integrated Resource Plan (IRP) is the process to establish the need for power generation capacity expansion in South Africa. IRP 2019 highlights clear medium term policy positions (to 2030) whilst long term trends (to 2050) could show a range of further insights. IRP 2019 is not a long term visionary plan, does not report transparently and comprehensively *still applies arbitrary new build constraints on VRE*.<sup>256</sup>

As a result, South Africa continues to face energy outages and a failure to meet demand. The failure to meet demand and necessary expansion for growth flows from

[a] 'the underperformance of the existing Eskom coal fleet'; [b] 'delays to the introduction of new capacity from power plants in Medupi and Kusile' ... because these plants '[were]

<sup>252</sup> M H Lubinga, N Mazibuko, S Ngqangweni, Y Potelwa & B Nyhodo 'Impact of Export Promotion And Market Development on Social Welfare in South Africa: Evidence from the Agricultural Sector' (2018) 6(2) *African Evaluation Journal* 1. Export promotion and market development activities in the agricultural sector play a key role in improving social welfare.

<sup>253</sup> J Lekunze 'Linking Energy Efficiency Legislation and the Agricultural Sector in South Africa' (2017) 13(1) *The Journal for Transdisciplinary Research in Southern Africa* 359.

<sup>254</sup> *ibid.*

<sup>255</sup> K Creamer 'Cabinet Considers, But Fails to Approve, IRP Update' *Polity* (19 September 2019), accessed at <https://www.polity.org.za/article/cabinet-considers-but-fails-to-approve-irp-update-2019-09-19>.

<sup>256</sup> J Wright, J Calitz, J Fourie, C Ruan & L Chiloane 'Integrated Resource Plan 2019: Initial CSIR Insights and Risks/Opportunities for South Africa' *Council for Scientific and Industrial Research Working Paper* (2019), accessed at <http://researchspace.csir.co.za/dspace/handle/10204/11200>. (Emphasis added)

introduced [and] have ... been performing below design specifications'; [and c] 'labour representatives reportedly raising concerns over the diminishing role of coal.'<sup>257</sup>

In sum, the government – even with a new IRP from 2019 – has failed to take significant advantage of the developments in renewables, especially the fact that solar and wind power are quite often cheaper than coal. (The extent to which corruption (state capture) played a role in this fiasco is not the subject matter of this book. Others can dig that up.) Labour rightly fears that any change in a bankrupt Eskom's method of operation will eliminate employment associated with coal production in favour of less-labour intensive renewables and that an unbundling of Eskom will also lead to retrenchments. The extent to which the current government remains stuck because of its partnerships with and electoral dependency upon unions places the entire economy in jeopardy.

The mining fiascos aside, this section remains focused on agriculture. The failure to tackle energy production undermines the capacity of the agricultural sector to expand. Moreover, as the section in Chapter II on the Eastern Cape reflects, novel technologies are necessary to address the immense cost of drought across both the sector and the country.<sup>258</sup> However, the limitations and arbitrariness of the 2019 IRP or even policy directives – will retard growth in agriculture. It will impair the introduction of novel technologies, limit exports and raise the cost of basic foodstuffs. The 2019 IRP will likely limit the ability of smaller agricultural outfits to produce efficiently and competitively. According to Senyolo, Long, Blok and Omta 'high initial investment costs, additional labour requirements and management intensity associated with conservation agriculture and rainwater harvesting ... pose problems' for small landholders.<sup>259</sup> The best strategy that the authors could propose in this depressing, overheated climate are 'drought tolerant and early maturing seed varieties.'<sup>260</sup>

Here we have another example of how one wicked problem often interacts with and accelerates another wicked problem. The pressures of climate change require novel energy technologies. To the extent that these technologies are adopted, they may result in a net job loss. However, the failure to introduce new technologies will result in an even greater loss of jobs as both climate change and permanent technological unemployment wreak havoc on the agricultural sector and those employed in it.

It's worth ending this section with an assessment of how the decline in agricultural employment fits the book's overarching theory of permanent technological unemployment. Given that a combination of a concentration of wealth and necessity has turned South Africa into the biotechnology leader on the African continent and the ninth largest producer of genetically engineered crops worldwide, one might expect agricultural employment to follow the paths of other technologically advanced countries. That has not happened.

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<sup>257</sup> Creamer (2019).

<sup>258</sup> Agriculture is heavily dependent on water; it will therefore face significant challenges in some regions due to climate change. C J Steyn *Exploring Ethical Challenges, Climate Change and Implications on Land and Water Use within the Agricultural Sector of the Garden Route, Western Cape, South Africa* (Unpublished MPhil Thesis, Stellenbosch University, 2013).

<sup>259</sup> M Senyolo, T Long, V Blok & O Omta 'How the Characteristics of Innovations Impact their Adoption: An Exploration of Climate-Smart Agricultural Innovations in South Africa' (2018) 20 *Journal of Cleaner Production* 172.

<sup>260</sup> *ibid.* at 175.

As a result of both technological development and higher paying employment in other industries and in urban areas, only 1.3% of the population in the United States works directly in agriculture. The United States has 3.2 million farmers, livestock owners and farm managers who employ roughly 800 000 workers. The percentages are even lower in England and Germany (approximately 1%).

Roughly 1.6 million people worked in the South African agricultural sector in the 1960s. Now only 850 000 workers are so employed – not quite the diminution experienced in developed economies.<sup>261</sup> (The Quarterly Labour Force Survey conducted by Statistics South Africa in 2018 showed a 3% year-on-year decline in agricultural employment in the first quarter to 847 000 jobs.<sup>262</sup>) During the 11-year period from 1988 to 1998, the commercial farm sector shed 140 000 regular jobs, a decline of roughly 20%. Moreover, the 20-year period from 1998 to 2018 reflects a further trend away from employment of regular, permanent workers, to a simultaneous, though not commensurate, increase in the use of casual workers.<sup>263</sup> This trend means employment with less security and consistency.<sup>264</sup>

Those numbers are also deceptive.

Current figures suggest that 10% of the entire formal farming workforce can be found on 400 000 farms – 40 000 commercial farms and 360 000 very small landholdings. The number of small landholdings likewise tends to distort one's perception of the agricultural employment sector.<sup>265</sup>

That's not exactly the kind of gigantic displacement effect that one would expect from a world leader in biotechnology. Moreover, South Africa's persistently high structural unemployment does not reflect a reinstatement effect from greater productivity and the creation of new forms of employment elsewhere in the economy. Thus, while banking employment fits Acemoglu and Restrepo's model, agricultural employment does not seem to do so as readily. However, when one takes into account that 90% of farms are small landholdings, then it makes no sense whatsoever to supplant old-fashioned methods with expensive 'so-so' or even cutting-edge technology – at least from the perspective of the individual landholder.

The general discussion of the history of permanent technological unemployment provides another explanation for this disjunction between banking and agriculture. The colonial and apartheid state had a strong interest in maintaining the forced labour and

<sup>261</sup> According to StatsSA the employment figures for April-June 2019 ran as follows: Both sexes: 842 000; Women: 248 000; Men: 594 000. *StatsSA 'Quarter Labour Force Survey – Quarter 2: 2019' Statistical Release P0211* at 37-8, accessed at <http://www.statssa.gov.za/publications/P0211/P02112ndQuarter2019.pdf>.

<sup>262</sup> W Sihlobo 'SA Agricultural Employment Down by 3% y/y in Q1, 2018' *Agribusiness Research* 15 May 2018, accessed at <https://agbiz.co.za/uploads/AgbizNews18/180520-Employment.pdf>.

<sup>263</sup> 'Agriculture' *StatsSA* (2000).

<sup>264</sup> T Simbi & M Aliber 'Agricultural Employment Crisis in South Africa' (2000) *Trade and Industrial Policy Secretariat Working Paper 13\_2000* at 3, accessed at <http://www.tips.org.za/files/415.pdf>.

<sup>265</sup> Department of Agriculture, Forestry and Fisheries 'Estimate of the Contribution of the Agriculture Sector to Employment in the South African Economy' (2010), accessed at [http://www.nda.agric.za/docs/Economic\\_analysis/Contribution\\_agriculture\\_sectorSAeconomy.pdf](http://www.nda.agric.za/docs/Economic_analysis/Contribution_agriculture_sectorSAeconomy.pdf). According to the Department of Agriculture, the agricultural sector contributed 11% to the overall employment. By 2010, it had decreased significantly to 5.1%. A significant part of the discrepancy in numbers and percentages flows from how different departments and agencies determine employment participation in the agricultural sector.

slave-like conditions imposed upon the vast majority of South African farm workers. Workers were paid at a subsistence level, and the oversupply of labour meant that farmworkers could always be replaced without cost. Thus, while productivity has increased due to technological advances, labour has not benefitted from breakthroughs in agriculture. As I have written elsewhere, while the plantation-cum-concentration camp conditions of South African farms may have unofficially ended in 1994, the conditions of farm workers has improved only marginally as a result of the interventions such as the Basic Conditions of Employment Act.<sup>266</sup> Had the racist and extractive institutions created under colonial rule and apartheid not occurred – and had there been significant land reform since 1994 – current employment figures would be sharply lower as well as reflective of a more just and fair social order.

But while such a counterfactual regarding colonial rule and apartheid may read as rather repugnant, it's not entirely meaningless. The arid and inhospitable nature of South African land means that only 3% of the total can be used for agriculture. (That percentage assumes that drought conditions will not destroy much of what is left of South African agriculture. As the discussion of climate change in the Eastern Cape in Chapter II suggests, we might be witnessing the beginning of an extremely severe contraction in arable land.) What remaining land exists is suitable primarily for grazing. Moreover, while the current racial split of the 40 000 commercial farms – 35 000 white-owned and only 5 000 black-owned – requires redress, current government proposals on land reform mark only farms larger than 12 000 hectares as subject to 'expropriation without compensation'. That figure represents a mere 0.22% of all farms. Increased black land ownership under new land reform policies also seems unlikely to change patterns of employment.

But let's assume that land reform policy was more aggressive. If we wished new black-owned farms to succeed, it would require a bouquet of support structures: from skills development, to lines of credit, to access to the most modern agricultural technology (especially in the face of desertification of much of South Africa's arable land). A change of title without significant financial and technical support will severely limit the efficacy of land reform. Mere shifts in title in the face of a fiscus that will find it next to impossible to pay for a second relief or stimulus package after the second lockdown in December 2020 suggests a very challenging transition should a new policy ever come into place. How that policy shift occurs, when the Land Bank – a major cog in the redistributive wheel – has recently declared bankruptcy, is another, not incidental, matter.<sup>267</sup>

This last set of assessments is not without real-time support in numbers. Between 2011 and 2016, more than 500 000 households in South Africa's former Bantustans ceased farming.<sup>268</sup> That number reflects a 20% reduction in crop farming households. The reasons for this contraction according to black farmers in the most deeply disadvantaged, rural parts of South Africa track quite closely what new black farm owners would need to possess under an aggressive land reform package. Former subsistence farmers ceased production because of:

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<sup>266</sup> S Woolman & M Bishop 'Down on the Farm and Barefoot in the Kitchen: Farm Labour and Domestic Labour as Forms of Servitude' (2007) 24 *Development SA* 595.

<sup>267</sup> E Stoddard 'Another SOE Tale of Woe: Land Bank Defaults on Loan' *Daily Maverick* (21 April 2020), accessed at [https://www.dailymaverick.co.za/article/2020-04-21-another-soe-tale-of-woe-land-bank-defaults-on-loan/?utm\\_](https://www.dailymaverick.co.za/article/2020-04-21-another-soe-tale-of-woe-land-bank-defaults-on-loan/?utm_).

<sup>268</sup> *StatsSA* 'Agriculture' (2017).

- insufficient savings to procure necessary products – from seed to soil to machinery;
- increasing incomes from other sources – e.g., ‘social grants’ – that enabled the purchase of basic staples from shops;
- droughts brought on by ‘climate change’;
- ‘declining soil fertility’ and the inability to procure fertiliser;
- damage to crops by livestock because children are actually in school;
- changes from patriarchal to matriarchal households and a diminished inclination to engage in farming as a livelihood;
- movements of youth from rural areas to urban areas in pursuit of a better life than subsistence farming provides; and
- ‘inadequate direct and policy support from the government’.<sup>269</sup>

The new black land-owning class would face similar challenges.

But let’s assume that land reform policy did indeed embrace significant financial and technical support for ‘new’ black-owned farmers. What then? One might expect that the new ownership would continue to benefit from the current low level of wages – unless the workers indeed became the owners. However, given both extreme drought and the need for new farming technologies, one would expect at least some displacement of farmworkers and small farmers by automation. Given the deep structural impediments to land reform, and an ongoing lack of political will, the likelihood that labour’s share of the agricultural sector’s value will decline will largely be a function of the inhospitable physical environment in which South African agriculture operates.

The history of technological unemployment offers an explanation even if contemporary models for more advanced economies do not. Labour only flourishes when it has the backing of the state. Thus, as we saw in both Europe and Asia during the 19th century, labour enjoyed ongoing support from the state because rulers feared massive social upheaval and outright rebellion. The rulers of France and China understood that if laws were changed in order to enable technological innovations to increase productivity, then those same laws would result in a significant number of displaced workers and depressed wages in those sectors employing novel forms of automation. The number of worker revolts throughout the late 18th century through the mid-19th century was sufficient to slow the adoption of legislation friendly to innovation as well as the increased capital investment necessary to turn innovations into industrial revolutions.

South Africa, a rather sleepy trading post through most of 18th and 19th centuries, shared some of these features. But as a disaggregated set of settler colonies, repressive republics and independent kingdoms until 1870, it lacked the centralised structure of both European and Asian states required to take the next jump.

Perhaps the best comparator for South Africa is the antebellum South of the United States from settlement in the early 17th century until the Civil War in 1861, and from the Jim Crow South until the Civil Rights Movement of the 1960s. In the United States, slavery was a dominant feature of the colonial and post-colonial South (which of course ‘fed’ the commodities eventually used by the industrial North). Although the Constitution assiduously avoided the term ‘slave’, Article 1 Section 9 of the United States Constitution reads as follows:

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<sup>269</sup> ‘Smallholder Crop Farming Is on the Decline in South Africa – Here’s Why It Matters’ *The South African* (10 July 2019), accessed at <https://www.thesouthafrican.com/lifestyle/smallholder-crop-farming-decline-south-africa/>.

‘The Migration or Importation of such Persons as any of the States now existing shall think proper to admit, shall not be prohibited by the Congress prior to the Year one thousand eight hundred and eight, but a tax or duty may be imposed on such Importation, not exceeding ten dollars for each Person.’ It thereby allowed the slave trade to continue for 20 years after it came into effect. However, the Constitution’s sunset clause said nothing about the continuation of slavery thereafter. Only after the 13th Amendment was passed on 6 December 1865 – once the Civil War had ended – was slavery formerly abolished.<sup>270</sup>

While a period of radical reconstruction followed the Civil War, the federal government eventually withdrew its support for the newly emancipated African-Americans. As a result, the plantation culture of the South continued. The Southern system of Jim-Crow laws kept African-Americans disenfranchised and dispossessed, in a continuous state of penury and second-class citizenship.<sup>271</sup> Free African-Americans made their way to – and provided inexpensive labour in – the industrial North. A century would pass before African-Americans had their civil rights enshrined in law. It will require a sustained Black Lives Matter movement – and continued pressure on the Biden administration as well as states, cities and social institutions writ large – to bring centuries of structural exclusion and brutality to an end. The end will not be quick if for no other reason than this crisis competes with a host of other crises.

What’s remarkable about South Africa is not the prevalence of slavery during colonialism but that the state created increasingly more repressive regimes of slavery and evermore exploitative relationships between industry and labour. The agricultural sector continues to reflect that history. Laborers on large holdings remain impecunious, and small landowners in former Bantustans find it difficult to maintain viable subsistence farms.

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<sup>270</sup> The 13 Amendment, Part 1, reads: ‘Neither slavery nor involuntary servitude, except as a punishment for crime whereof the party shall have been duly convicted, shall exist within the United States, or any place subject to their jurisdiction.’ Part 2 granted Congress the power to pass such laws as were necessary to enforce Part 1.

<sup>271</sup> The COVID-19 Pandemic has had a disproportionately negative effect on African-Americans. S Soucheray ‘US Black Americans 3 Times More Likely Than Whites to Get COVID-19’ Center for Infectious Disease Research and Policy (14 August 2020), accessed at <https://www.cidrap.umn.edu/news-perspective/2020/08/us-blacks-3-times-more-likely-whites-get-covid-19>. That African-Americans – and other marginalised communities – have been three times as likely to become infected from COVID-19 (and were twice as likely to die in the first half of 2020) can be directly connected to slavery and the ongoing exclusion of African-Americans from the mainstream economy as well as the African-American community’s concentration in dense urban environments. S Strings ‘It’s not Obesity. It’s Slavery: We Know Why COVID-19 is Killing So Many Black People’ *The New York Times* (25 May 2020), accessed at <https://www.nytimes.com/2020/05/25/opinion/coronavirus-race-obesity.html>. Another example of one wicked problem reinforcing another – the pandemic and radical inequality of wealth and status – occurred after the murder of George Floyd by a white police officer. The perpetuation of systemic racism as manifest in both pandemic morbidity and mortality – and yet another instance of police brutality – set off riots and sustained protests across cities in over 20 states. L Gottbrath, C Newton & Z Rasheed ‘Protests Spread across US over George Floyd Death’ *Aljazeera News* (30 May 2020), accessed at <https://www.aljazeera.com/news/2020/05/george-floyd-death-live-updates-protests-erupt-200529124843031.html>. Christian Cooper’s widely reported and video-taped experience of systemic racism occurred just prior to Floyd’s murder and poured more fuel on the justifiably fiery narrative that set off the protests. S Nir ‘The Bird Watcher, That Incident and His Feelings on the Woman’s Fate’ *The New York Times* (27 May 2020), accessed at <https://www.nytimes.com/2020/05/27/nyregion/amy-cooper-christian-central-park-video.html>.

Land reform may not resolve the problems of the past, the present or the future. But it's easy to understand why the strong *de facto* legacy of colonialism and apartheid in the agricultural sector generates legitimate calls for large-scale redress.

*Artisans and SMMEs*

Lots of ink has been spilled on the need for greater artisanal training and investment in SMMEs in South Africa. However, a lot of the South African government ink spilled on the subject sounds like public policy designed to placate large numbers of perpetually unemployed persons, existing and potential artisans, and small to medium to micro enterprises that are rightfully alarmed by the ability of novel technologies to permanently replace them without any reinstatement effect elsewhere in the economy. For example, the National Development Plan (2012) imagines that by 2030 SMMEs will contribute to a 60–80% increase in GDP.<sup>272</sup> Moreover, the NDP promises that SMMEs will create 90% of the 11 million new jobs created over the next decade in South Africa.<sup>273</sup> Another document reads:

Widespread claims suggest artisanal skills shortages to be a binding constraint on economic growth. Over the past two decades, therefore, debate about artisan skills development in South Africa has focussed on the validity of the current system and how the system can be reformed in a democratic, inclusive South Africa. Specifically, the establishment of a good artisan training system has been identified as an urgent priority towards reaching the goals of the National Development Plan (NDP) and, more generally, in supporting the drivers of growth and social development in South Africa.<sup>274</sup>

The first two figures, and the broader commitment to basic artisanal training, strain credulity.

Let's start with a dose of reality.

At the beginning of 2020, there were roughly 250 000 SMMEs in South Africa. While SMMEs account for 98.5% of formal firms, as of 2019 they provided a mere 28% of formal jobs. The lion's share of employment, 56%, in the formal economy lay in the hands of a mere 1 000 employers at the end of 2019. (Those employers combine both the private sector and the public sector.) These employers were also currently creating new jobs at a far quicker pace than SMMEs. Where the government's belief in the virtue of SMMEs came from is hard to say. In many diverse economies with relatively well-educated populations, small businesses have *historically* been drivers of new jobs.<sup>275</sup> But South Africa doesn't fit that model.

<sup>272</sup> 'Globally, over 95% of enterprises are SMMEs, which employ 60–70% of the working population.' (Or at least they were until the COVID-19 pandemic.) 'Small and Medium-sized Enterprises: Local Strength, Global Reach' *Organisation for Economic Co-operation and Development Observer Policy Brief*(2000), accessed at <https://www.oecd.org/cfe/leed/1918307.pdf>. South African has never tracked such global trends.

<sup>273</sup> South African Government *National Development Plan 2030* (15 August 2012), accessed at <https://www.gov.za/issues/national-development-plan-2030>:

The NDP aims to eliminate poverty and reduce inequality by 2030. According to the plan, South Africa can realise these goals by drawing on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnerships throughout society.

<sup>274</sup> *ibid.* See also JD Lewis 'Promoting Growth and Employment in South Africa' (2002) 70 *South African Journal of Economics* 338, accessed at <https://doi.org/10.1111/J.1813-6982.2002.Tb01187.X>.

<sup>275</sup> That too, has changed over the last 25 years. Given an extended period in which the many states have sided

In a COVID-19 environment, South Africa's lack of alignment with global or historical trends became crystalline clear. The business stimulus part of the R800 billion COVID-19 response package attempted to stave off ruin for the 1 000 blue chip employers. The relief portion of the R800 billion COVID-19 response package, with novel monthly grants to newly idled SME employers and employees, sought to save a majority of the population from hunger and malnutrition. One must wonder, before one dreams of training programmes, what the government will do now that its mismanagement of both the economy and public health forced a second partial lockdown in December 2020. If there's no money for another similar round of stimulus and relief packages, there's nothing for artisans or SMMEs.

South Africa under apartheid was a large plantation-cum-concentration camp in which the majority of the economy was owned by a domestic minority and foreign investors, both controlled by the state. 'Twas national socialism, in the Third Reich sense, for a privileged not quite Aryan, but pasty minority. South Africa also possessed enormous and strategically important commodities – and a well-developed stock exchange that enabled the country to punch well above its weight.

That was then.

South Africa now sits at about 89th place globally in per capita income (in terms of purchasing power parity).<sup>276</sup> That figure – 89th place – must be kept in mind when one discusses the nation's position as having the world's highest Gini coefficient. But even that 'fact' skews perceptions in unhelpful directions. As a full professor at a South African University with a 17-year-old car and a two-bedroom flat, I am wealthy by comparison to most South Africans. According to some measurements, my after-tax income places me in the top 3% of earners.<sup>277</sup> Yet I barely cover my monthly costs of living due to medical expenses not covered by my university's private health plan.

But my privilege provides other advantages. If I wanted to do so, I could start and run a small business. Why? Given my income and even small amount of property, I could secure access to credit. On the other hand, a 2010 FinMark trust survey found that 87% of small formal sector firms had never accessed credit.<sup>278</sup> The Global Entrepreneurship Monitor

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with capital, innovations in technology and in business models have squeezed small business owners out. Think Tom Hanks and Meg Ryan in *You've Got Mail* (1998). Problems of scale and deindustrialisation have actually slowed China's growth. It's hard to centrally plan for 1.4 billion people and to increase consumption to drive development. Moreover, having lifted most of their society out of extreme poverty, there's no longer an easy path upwards for the 400 million still at the food poverty line via low-wage manufacturing.

<sup>276</sup> 'Country by Country Purchasing Power Parity' *World Economic Outlook Database*, International Monetary Fund (2018), accessed at <https://www.imf.org/external/pubs/ft/weol/2017/02/weodata/weorept.aspx?>

<sup>277</sup> Staff Writer 'How Much You Need to Earn Each Month to be in the Richest 1% in South Africa' *BusinessTech* (22 August 2019), accessed at <https://businesstech.co.za/news/wealth/336309/how-much-you-need-to-earn-each-month-to-be-in-the-richest-1-in-south-africa/>.

<sup>278</sup> FinMark Trust *Financial Access & SME Size In South Africa* (2016); See also R G Khoase & P Ndayizigamiye 'Analysing the Role and Impact of Public and Private Supporting Institutions Interventions on SMMEs Access to Funding: A Comparative Study between Lesotho and South Africa' (2018) 14 *Acta Universitatis Danubius: Oeconomica* 58:

Lesotho and South Africa have both put in place public and private supporting institutions to assist SMMEs in accessing funding. However, previous studies indicate that SMMEs are still struggling to access funds at both the start-up and growth phases. (...) On one hand, interviews with six (6) supporting institutions' representatives conveniently sampled from each country reveal commonality of

(GEM) Report shows that South Africa has one of the highest business start-up failure rates in the world.<sup>279</sup> In 2019, Minister of Trade and Industry Rob Davies confirmed that over ‘70% of new businesses fail in less than two years of being in operation.’<sup>280</sup> In 2015, the actual number of SMMEs totalled 670 000, a fall of 37 000 from 2008.<sup>281</sup>

It’s difficult to square these numbers – the lack of access to credit and the rate of business failure – with the notion that SMMEs are somehow going to generate 11 million new jobs in the next decade and be responsible for 60–80% of growth in the economy. Given the concentration of economic power in the hands of a mere 1 000 discrete entities, the investment in new technologies (and the acceleration of automation) by these companies and a state more likely to diminish the space within which small to medium enterprises operate, we are likely to see increased permanent technological unemployment in this sector. According to a number of academics, government policy has failed to provide adequate support for SMMEs to succeed. Ngwenya and Zondi write that:

[A] lack of systematic monetary and non-monetary economic growth enablers ... [limit] the SMME prosperity ... [P]olicy-makers and the relevant authorities [must] level the playing field on behalf of ... SMMEs [in order to stimulate their] ... growth.<sup>282</sup>

One non-monetary growth and employment enabler of SMMEs that appears to be absent, notes Kalitanyi, is an ongoing inability of the state to recognise ‘the ... identity of these businesses ... [and consequently, a concomitant inability] to rightly direct ... aid and support towards these businesses.’<sup>283</sup> Not surprisingly, Bhorat, Asmal, Lilenstein and Van der Zee have demonstrated that SMEE growth is also blunted by:

- poor education and limited business-related skills;
- infrastructure ‘space to operate, telephone or internet, electricity, transportation and access to land’;
- ‘[c]rime and [c]orruption’; and
- a systemic failure with respect to:
  - ‘tax, customs and trade regulations’,
  - ‘labour regulations’,
  - ‘business licensing’,
  - ‘policy uncertainty’,

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interventions such as the provision of start-up capital, additional funding and referral services. On the other hand, data collected by means of a questionnaire from 270 and 210 SMMEs owners/managers in Maseru and Pietermaritzburg respectively reveal that SMMEs owners in both countries face similar challenges such as high interest rates and the inability to meet the collateral requirements. The paper concludes that notwithstanding the interventions, SMMEs still face challenges related to accessing funding. Thus, the paper suggests that interventions that seek to enhance SMMEs access to finance need to be designed to suit SMMEs idiosyncratic nature to be relevant and appealing to SMMEs owners.

<sup>279</sup> The Global Entrepreneurship Monitor (GEM) 2018/2019 *Global Report* (2020), accessed at <https://www.gemconsortium.org/report/gem-2018-2019-global-report>.

<sup>280</sup> S Vuba ‘The Missed Opportunity: SMMEs in the South African Economy’ *Mail & Guardian* (12 April 2019), accessed at <https://mg.co.za/article/2019-04-12-00-the-missed-opportunity-SMMEs-in-the-south-african-economy>.

<sup>281</sup> *ibid.*

<sup>282</sup> T Ngwenya & W Zondi ‘Factors Affecting Economic Growth Enablers of SMME’s: A Case of Tourism-Attraction in Durban, South Africa’ (2019) 8 *African Journal of Hospitality, Tourism and Leisure* 1.

<sup>283</sup> V Kalitanyi ‘Enterprise Propellers (EP) and Identity of SMMEs, Informal Business and Cooperatives in Gauteng Province of South Africa’ (2019) 15(1) *Acta Universitatis Danubius: Oeconomica* 53.

- ‘harassment by officials’,
- a lack of access to the ‘legal system/conflict resolution’ and
- ‘zoning regulations.’<sup>284</sup>

Policy failures with respect to artisans follows a similar pattern. The South African government has spoken persistently about the need for more ‘practical’ training, as opposed to formal education, in order to address increasingly high levels of unemployment. But what does ‘practical’ mean and what forms of work do proponents of artisan-based employment have in mind? Again, there appears to be a misuse of nomenclature and a significant miscalculation when it comes to both supply and demand.

In their policy brief – *Why Changes to Occupational Domains Matter for Artisanal Skills Planning in South Africa* – Wildschut and Meyer draw two primary conclusions:

- That there has been an expansion in and an elevation of the knowledge and skills required for artisanal work.
- That the tools associated with artisanal work are changing with the potential to impact the boundaries of defined occupational domains.<sup>285</sup>

Wildschut and Meyer then offer the following two examples that reflect the disjunction that exists between the skillsets and the level of education artisans in South Africa currently possess (as a general rule), and the skillsets and level of education a technologically advanced world now expects them to possess:

[1] Artisans are increasingly expected to apply and be proficient in new technologies like Programmable Logic Controllers (PLC) and/or Supervisory Control and Data Acquisition (SCADA) systems. In the case of millwrights for example, the incorporation of PLCs represent a significant change to production processes that in the past were largely manually controlled. As a consequence millwrights are required to be more technologically skilled in order to perform activities that are increasingly electronic and computerised.

[2] Another example is that of mechatronics, a new and emerging multi-disciplinary field of training, qualification and practice. The newly recognised occupation of a mechatronics trades worker promises an individual that has a broader and higher level of knowledge and skills in comparison to traditionally trained artisans. This case is probably the best example that traditional notions of artisans as being primarily practically skilled as opposed to possessing theoretical knowledge is changing. This is causing contestation and perceived changes to the scope and level of artisanal work and, thus, also the demarcation of the work of technicians within this field of practice.<sup>286</sup>

<sup>284</sup> H Bhorat, Z Asmal, K Lilenstein & K van der Zee ‘SMMEs in South Africa: Understanding the Constraints on Growth and Performance’ *DPRU Working Paper 2018-02* (2018). See also B Bushe ‘The Causes and Impact of Business Failure among Small to Micro and Medium Enterprises in South Africa’ (2019) 7(1) *Africa’s Public Service Delivery and Performance Review* 210. Bushe’s study found SMME failure to turn on: [Three factors:] entrepreneur incapacity, environmental inauspiciousness and enterprise incompetence. All these are attributed to poor understanding of the varied needs of SMME at each stage of its growth process. The impacts are loss of jobs and income, poverty, social evils and unemployment, among others.

<sup>285</sup> A Wildschut & T Meyer ‘Why Changes to Occupational Domains Matter for Artisanal Skills Planning in South Africa’ *Labour Market Intelligence Partnership Policy Brief 18* (2016), accessed at [http://www.psetresearchrepository.dhet.gov.za/sites/default/files/documentfiles/LMIP%20Policy%20Brief%2018%20web-ready\\_0.pdf](http://www.psetresearchrepository.dhet.gov.za/sites/default/files/documentfiles/LMIP%20Policy%20Brief%2018%20web-ready_0.pdf).

<sup>286</sup> *ibid.*

If ‘artisanal skills shortages [are] a binding constraint on economic growth’,<sup>287</sup> the cause of this shortage would appear to be an ongoing disjunction between current artisanal training and the kinds of artisanal training that a fourth industrial revolution requires.

### *Manufacturing*

If the year were 1994, then one might still be holding out hope that manufacturing would drive new employment opportunities. Habanabakiza and Muzindutsi wryly note that the sector has always had great potential to contribute to economic growth, and employment in particular.<sup>288</sup> Promise is one thing, production another.

By 2019, a mere 10% of South Africa’s workforce could be found in manufacturing: half of what it claimed at the end of apartheid.<sup>289</sup> (While 2018 saw five of the ten divisions within the manufacturing sector register nominal growth, the other half declined.) From November 2019 through March 2020, manufacturing growth deteriorated for five straight months, (–3.5%, –6.3%, –1.9%, –2.1%, –5.5%). When COVID-19 and the subsequent restrictions arrived, manufacturing fell off a cliff. According to StatsSA, manufacturing overall fell by 49.4% in Q2 of 2020 (year-on-year). Let’s see what 2021 brings, and whether the Level 3 lockdown of December 2020 has teeth or is just more theatre.

Automobiles took the hardest hit – with a drop of almost 98% in sales. The sector will not find solace in the wholesale failure of the car rental market. Bidvest (formerly Budget) Car Rentals decided to suspend operations (and sell all of its stock if possible) as of mid-July 2020.<sup>290</sup> The absence of tourism – and business travel – has decimated car rental operations worldwide. The glut of fairly new (former rental) cars on the open market has, in turn, depressed new car sales from manufacturers.<sup>291</sup>

Manufacturing might have generated new jobs in South Africa in the 1990s and throughout the 2000s, as it did elsewhere in world – where low-wage positions were later leveraged into more skilled positions. Profits could have been reinvested in both more complex forms of manufacturing and ploughed into taxes for education and training that might have generated a far more skilled and nimble labour pool. However, while many studies have concluded that the inflexibility of the labour relations system and a lack of investment incentives in South Africa perpetuated a sector that woefully underperformed compared with the sector’s production in other low- to middle-income countries, that’s only one part of a more complex answer.<sup>292</sup> Rama and Forteza’s suggest instead that minimum wages and mandatory benefits do not hurt growth, but that ‘the relative size of organized labour *in government* appears to matter’ most and has a negative effect on economic performance. ‘Labour market rigidity’, they conclude, ‘seems to be relevant more

<sup>287</sup> *ibid.*

<sup>288</sup> T Habanabakiza & P-F Muzindutsi ‘Analysis of the Keynesian Theory of Employment and Job Creation: The Case of the South African Manufacturing Sector’ (2018) 18 *Folia Oeconomica Stetinensia* 123.

<sup>289</sup> ‘Manufacturing’ *StatsSA* (2019), accessed at <http://www.statssa.gov.za/?p=11890>.

<sup>290</sup> P Mashego ‘Covid-19: Bidvest May Close or Sell Its Car Rental Division’ *Fin24* (14 July 2020), accessed at <https://www.news24.com/fin24/companies/covid-19-bidvest-may-close-or-sell-its-car-rental-division-20200714>.

<sup>291</sup> M Wayland ‘Hertz Bankruptcy and a Distressed Rental Car Market Means More Pain for US Automakers’ *CNBC News* (29 May 2020), accessed at <https://www.cnbc.com/2020/05/29/hertz-bankruptcy-distressed-rental-car-market-hurts-us-automakers.html>.

<sup>292</sup> R M Challenor *The Reasons for the Demise of the Clothing Manufacturing Industry in South Africa: A Contemporary Study* (Unpublished MBA thesis, University of KwaZulu-Natal, 2005).

for *political* reasons’ – and who stands to lose from changes to regulatory frameworks – ‘than for *economic* reasons.’<sup>293</sup> Thus, it’s COSATU’s membership in the governing tripartite alliance that has, in part, held back this sector’s growth and contributed to ongoing high levels of structural unemployment, and overall social and economic underdevelopment.

I have already noted the large outflow of capital into investments beyond our borders. Habanabakiza and Muzindutsi have suggested something of a Keynesian model for investment in the manufacturing sector. However, they bracket their policy recommendations by acknowledging that the opportunities of the 1990s no longer exist. As a result, spending would have to be very carefully targeted. Given the government’s ongoing failure to control the economic or public health fall-out from the COVID-19 pandemic and its ongoing inability to manage now bankrupt SOEs, one no longer wonders whether it possesses the wisdom or the political will to follow Habanabakiza and Muzindutsi’s modest recommendations.<sup>294</sup> It does not. In addition, the lifeboat conditions in which we found ourselves at the end of December 2020, where securing adequate relief to feed a hungry nation had supplanted any notions of growth, suggest that even Habanabakiza and Muzindutsi’s modest recommendations will have to wait.

If tenders can be properly issued, then others have suggested revisiting the public-private-partnerships abused under the Zuma regime. For example, BFG, a composite manufacturing company, ‘has invested R50-million in a new Gauteng factory to supply components for the Passenger Rail Agency of South Africa’s new commuter trains.’<sup>295</sup> (Unfortunately, Gauteng would first have to ensure that the infrastructure necessary for the trains to run on time is actually still in the ground.<sup>296</sup>)

Targeted investment is important, given that South African manufacturing now finds itself a part of the global trend away from the established forms of mass manufacturing production, and, thus, a part of globalised value chains.<sup>297</sup> The time to build large industrial manufacturing sites – even if South Africa could afford them – has passed.

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<sup>293</sup> M Rama & A Forteza *Labor Market Rigidity and the Success of Economic Reforms across More than 100 Countries* (1999). (Emphasis added)

<sup>294</sup> T Habanabakiza & P-F Muzindutsi ‘Analysis of the Keynesian Theory of Employment and Job Creation: The Case of the South African Manufacturing Sector’ (2018) 18 *Folia Oeconomica Stetinensia* 123.

<sup>295</sup> S Moodley ‘High-Tech Composites Manufacturing Factory Opens in Gauteng’ *Creamer Media’s Engineering News* (15 August 2019), accessed at <https://www.engineeringnews.co.za/article/high-tech-composites-manufacturing-factory-opens-in-gauteng-2019-08-14>.

<sup>296</sup> B Simelane ‘Stripped Bare: Looting Till There Is Nothing Left of Gauteng’s Rail Network’ *Business Maverick* (29 September 2020), accessed at <https://www.dailymaverick.co.za/article/2020-09-29-stripped-bare-looting-till-there-is-nothing-left-of-gautengs-rail-network/>.

<sup>297</sup> When one cuts through all the caveats and the double-speak, even Stieglitz recognises that the window for mass production manufacturing as an engine for development has closed:

[South Africa needs] to try to deconstruct why the *export-led manufacturing model* was so successful in East Asia. Manufacturing combined in one sector everything that was needed – technological upgrading, foreign exchange, tax, employment, etc. The manufacturing sector played an important catalyst for entire economies. If you can’t replicate all of these things in one sector then you have to put together a portfolio of sectoral interventions ... Along with *niche* manufacturing, agriculture and tourism can generate employment, and the service sector is an important sector of the future ... This means, *there is a short window* in which South Africa can pursue a strategy, if *not* manufacturing-led, at least in which manufacturing plays a prominent role ... *if* [South Africa can] solve the corruption problem.

‘Joseph Stieglitz Speaks on Opportunities for SA Economy but Warns Austerity Doesn’t Deliver’ *Daily Maverick* (20 November 2019), accessed at <https://www.dailymaverick.co.za/>

There's now an urgent need, as elsewhere in the developing and the developed world, to respond to the pressures of deindustrialisation. A recent study of deindustrialisation in Durban showed that neither local government nor national government frameworks currently exist to deal with this depressing phenomenon.<sup>298</sup> Moreover, deindustrialisation has accelerated in South Africa as sustained, pandemic-induced lockdowns and restrictions have caused a large number of manufacturers to shutter.<sup>299</sup>

But even if such frameworks were to be created, would targeted investment be enough to offset the losses sustained during this period of permanent technological unemployment? The history and the future of Volkswagen SA suggests that it would not. At its pre-disruptive technology height, Volkswagen SA employed over 9 000 workers and produced a total of 210 000 cars and trucks for international and domestic consumption per annum.<sup>300</sup> Roughly, two decades later, the factory at Uitenhage alone 'churned out 16 453 units (... of Polo and Polo Vivo hatchbacks)' in the month of October 2019.<sup>301</sup> That steady, high level of production results in a total output of 200 000 cars per annum for just these *two* lines. Moreover, Volkswagen has done so with roughly *half* the labour-force. Within the next three years, Volkswagen's employment figures are set to drop even further. The parent company announced in March 2019 that it 'estimates that the *automation of routine tasks* will result in the loss of between 5 000 and 7 000 jobs by 2023.' Some of the job losses would take the form of retirements. (Retirements without replacements leaves fewer workers to pay taxes that cover the retirement and health benefits of both the retirees and those who have not yet reached the age of retirement.) The company has further stated that: 'Volkswagen will be boosting the pace of its transformation ... [and] taking important steps this year to strengthen competitiveness on a sustained basis.'<sup>302</sup> In short, automation will enable Volkswagen to remain competitive as it seeks to keep pace with other manufacturers who are rolling out both electric and conventional cars. As Pollyanna technophiles might be quick to note, Volkswagen executives anticipate that

*Even as some positions are cut, [the parent company] expect[s] to create 2 000 new jobs in electronics and software development to shape the firm's reorientation ... [and] that such employees would [hold] a job security guarantee valid until 2025 ...* Chief operating officer

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article/2019-11-20-joseph-stieglitz-speaks-on-opportunities-for-sa-economy-but-warns-austerity-doesnt-deliver.

<sup>298</sup> G Robbins & M Velia 'In with the New and Out with the Old? Industrial Estates and the Prospects of Manufacturing in Durban, South Africa' (2019) 30(1) *Urban Forum* 35.

<sup>299</sup> E Stoddard 'De-industrialisation Acceleration: SA Manufacturing Output Almost Halved in April 2020' *Business Maverick* (9 July 2020), accessed at [https://www.dailymaverick.co.za/article/2020-07-09-de-industrialisation-acceleration-sa-manufacturing-output-almost-halved-in-april-2020/?tl\\_inbound=1&tl\\_groups\[0\]=80895&tl\\_period\\_type=3&utm\\_medium=email&utm\\_](https://www.dailymaverick.co.za/article/2020-07-09-de-industrialisation-acceleration-sa-manufacturing-output-almost-halved-in-april-2020/?tl_inbound=1&tl_groups[0]=80895&tl_period_type=3&utm_medium=email&utm_)

<sup>300</sup> I Henry 'Auto Analysis: VW South Africa – 1999' *JustAuto* (1999), accessed at [https://www.just-auto.com/analysis/vw-south-africa\\_id86529.aspx](https://www.just-auto.com/analysis/vw-south-africa_id86529.aspx).

<sup>301</sup> R Bubear 'Volkswagen SA Smashes Monthly Production Record at Uitenhage Plant!' *CarMag* (8 November 2019), accessed at <https://www.carmag.co.za/news/industry-news/volkswagen-sa-smashes-monthly-production-record-at-uitenhage-plant/>.

<sup>302</sup> 'Volkswagen to cut up to 7 000 jobs by 2023' *SABCNews* (13 March 2019), accessed at <http://www.sabcnews.com/sabcnews/volkswagen-to-cut-up-to-7-000-jobs-by-2023/>. (Emphasis added)

of the VW brand Ralf Brandstaetter said in a statement the changes would ‘make Volkswagen fit for the electric and digital era’.<sup>303</sup>

One might imagine that some of those new jobs *might* be required for Volkswagen’s production in South Africa. However, the unique consensual, codetermination, learning model of German labour relations – in which labour benefits from an adaptive learning model of work organisation and shares decision-making with firm management – makes it far more likely that any benefits of automation will flow to German workers and that losses will be absorbed in jurisdictions where employees do not possess the same labour rights to consensual, codetermination grounded in German law.<sup>304, 305</sup>

The South African labour relations model looks nothing like the German model. Here, strong unions represent both the low-skill labour upon which South Africa was built, and the public sector and SOE employees that benefit from COSATU’s steadfast commitment to the ANC-SACP-COSATU tripartite alliance that took over the political reins of power in 1994. This palpable, undeniable difference in labour relations underscores the manufacturing sector’s inability to head off significant permanent technological unemployment. It should come as no surprise that case studies of the apparel and materials handling industries identify three general and glaring limitations of the manufacturing sector: ‘*The lack of a skilled workforce, innovation and technology, [and] a weak local supply chain.*’<sup>306, 307</sup>

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<sup>303</sup> *ibid.* (Emphasis added)

<sup>304</sup> L Turner *Negotiating the New Germany. Can Social Partnership Survive?* (1997). Two decades ago, the pressure on the consensual model came primarily from the reunification of West Germany and East Germany (where the model had not applied to the state and workers in far less efficient and consensual industries.) Today, the pressures on this resilient model flow from increased globalisation, automation and other disruptive novel technologies. However, while there’s been some erosion, the consensual, codetermination model remains strong in the areas of Germany’s traditional industrial strength. Marsden explains this resilience in terms of the ‘high performance work systems’ that embrace ‘flexible’ working conditions and ‘on-the-job problem-solving’. D Marsden ‘The Future of the German Industrial Relations Model’ (2015) 48 *Journal for Labour Market Research* 167, 168: ‘Germany’s stronger skill base and stronger workplace institutions have enabled many firms located there to pursue a high-discretion *learning* model of work organisation, compared with a more managerially directed *lean* model in Britain.’

<sup>305</sup> Unfortunately, even the German consensual model appears to be buckling under the strain of the COVID-19 recession. If no one is buying trucks, then there’s no point in making them. J Miller ‘VW’s MAN Tears Up Deal with German Unions as It Pursues Job Cuts’ *Financial Times* (29 September 2020), accessed at <https://www.ft.com/content/1bb7cdc9-05a7-46e5-ba0c-553c5990748b?>:

Volkswagen-owned truck and bus manufacturer MAN has torn up a deal with German unions and terminated job guarantees as it seeks to force through 9,500 staff cuts. In a rare move by a corporation in a country that prides itself on its consensual social market economy, MAN said it was forced to cancel the contracts as it faced a ‘perfect storm’ of Covid-19 and a slowing global auto market.

<sup>306</sup> S Mbatha *Development of Competitive Advantage Strategy for the Apparel Manufacturing Industry of South Africa* (Unpublished thesis, Tshwane University of Technology, 2014).

<sup>307</sup> For example, the South African materials handling industry imports most equipment, and has yet to embrace automation. Shumani Industrial Equipment claims that it views this limit in technology as an opportunity for retraining rather than retrenchment. M Nortje ‘South African Materials Handling Industry yet to Embrace Automation’ *Engineering News* (16 August 2019), accessed at <https://www.engineeringnews.co.za/article/s-african-materials-handling-industry-yet-to-embrace-automation-2019-07-31>. (Emphasis added)

*Trade – Wholesale, retail, restaurants and food*

Trade – wholesale and retail – accounted for 15.1% of GDP in 2019.<sup>308</sup> Only the finance sector punches higher, while governmental expenditure weighs in (heavily) at 19%.<sup>309</sup> Meanwhile, agriculture and mining contribute a meagre 2.5% and 8% to the pie.

South Africa’s retail trade fell 7.5% from a year ago in June of 2020, following a downwardly revised 11.9% drop in May – after a 49.9% massacre in April 2020 during the heart of the Level 5 Lockdown.<sup>310</sup> (Groceries and pharmacies kept the bottom from dropping out.) The expedited opening up of the economy prevented complete financial collapse and devastating, irreversible levels of unemployment. (The third quarter of 2020 showed a modest rebound.) However, the decision has already come with a discernible cost – roughly 12 to 13 million SARS-CoV-2 infections and some 40 000 deaths by the end of August 2020. And without any discernible government intervention to prevent transmission, a second wave began in late October 2020 and morphed into a tsunami that engulfed the nation with a more transmissible form of the virus that more than doubled the hospitalisations that occurred during the first wave. Given that the pandemic currently has no peak or end in sight, COVID-19 related morbidity and mortality may cause this sector to shrink further until new treatment modalities and variant-appropriate vaccines reach South Africa. Thus far, the South African government hasn’t demonstrated an ability to balance the competing public health and economic interests of the nation. The Level 3 lockdown of December 2020 provides the comfort of theatre, but it is designed to do no more than keep the economy open. That’s certainly of some comfort for this sector of this economy.

It is, however, worth recalling that post-hard lockdown May 2020 proved to be a particularly brutal month for trade. Here’s the year-on-year downturn in some subsectors as of May 2020:

- Bar sales (–100.0%);
- Food sales (–87.3%);
- Restaurants and coffee shops (–98.0%); and
- Takeaway and fast-food outlets (–85.7%).<sup>311</sup>

The ‘retail sector can be considered an “entry level” sector’ and has, in the past, absorbed some low/semi-skilled unemployed citizens in South Africa.<sup>312</sup> However, as the United Nations/WIDER analysis of South Africa’s employment in the services industry notes:

The essential problem with services as a route to development is that the most productive, growth-stimulating service sectors ... require highly skilled labour. For a farm worker to be productive in an industry like information technology, s/he would require many years of education and training. Whereas the same farm worker can become a more productive manufacturing worker fairly easily. Ultimately, skills portability gaps are on average more

<sup>308</sup> ‘Contribution per Industry to South Africa’s GDP’ *South African Market Insight*, accessed at <https://www.southafricanmi.com/south-africas-economic-structure.html>.

<sup>309</sup> *ibid.*

<sup>310</sup> ‘Retail’ *Trading Economics* (2019), accessed at <https://tradingeconomics.com/south-africa/retail-sales-annual>.

<sup>311</sup> ‘Key Findings for Food and Beverages, May 2020’ *StatsSA* (July 2020), accessed at [http://www.statssa.gov.za/?page\\_id=1856&PPN=P6420&SCH=7778](http://www.statssa.gov.za/?page_id=1856&PPN=P6420&SCH=7778).

<sup>312</sup> B Maglas et al. ‘Job Creation in the South African Retail Sector’ (2017) 13 *The Retail and Marketing Review* 1, accessed at [https://www.researchgate.net/publication/323915696\\_Job\\_creation\\_in\\_the\\_South\\_African\\_retail\\_sector](https://www.researchgate.net/publication/323915696_Job_creation_in_the_South_African_retail_sector).

easily closed in moving from agriculture to manufacturing, than from agriculture to high-end services. Therefore, it has been argued that African countries will struggle to create an environment that will exploit the growth potential of the services sector. Given that many high-productivity services jobs rely on highly skilled labour, poor levels of human capital accumulation in many low-income countries is likely to constrain growth through the services sector.<sup>313</sup>

Chances are that a sizable number of restaurants and retail stores will fail during the pandemic and result in significant numbers of permanent layoffs for employees already at the bottom of the formal economy pyramid. Most urban South Africans will notice that malls look like smaller versions of one another. Smaller stores – selling a limited range of trinkets, baubles, t-shirts and sneakers – kept afloat by anchor stores are the retailers least likely to survive diminished foot traffic. A full 85% of mall floor space is let out to the same large firms throughout the country – stores that should have sufficient reserves that will enable them to ride out the first two rounds of inclement weather.<sup>314</sup>

The luckiest South Africans will also notice that, in the COVID-19 era, they need not leave home to purchase most of a middle-class family's necessities. Food, pharmaceuticals, clothes, furniture, sporting equipment, building materials – virtually anything one might need – can all be purchased online and delivered to one's home. Indeed, such arrangements follow World Health Organization protocol: it recommends that consumers pay contactlessly – cashlessly – in order to limit, if not eliminate, transmission of SARS-CoV-2. Some countries – such as South Korea – quarantined all cash for two weeks so that it could be disinfected before being reintroduced into circulation. South Africa lacks that capacity – even if its mandarins could be trusted to do so. Here then, as discussed in the Prologue, is another driver of unemployment in retail due to artificial intelligence, automation and disruptive technologies: contactless, cashierless paypoints.

For South Africans, whether rich or poor, a return to normal (whatever that might mean in terms of an efficacious suite of vaccines for South Africa's highly transmissible variant or more effective treatment modalities for those who are moderately or severely infected), is not likely to occur before the end of 2021. The longer a full public health recovery takes, as Michaels Sachs notes, the more likely damage will be permanent. The economic ramifications of the pandemic will affect upper tier service in a variety of ways. International tourist destinations and services in the country will not suffer alone. Domestic travel should also flatline. In addition, individuals and families could eliminate most outside the house entertainment. One can eat at home for far less – and without exposure. Fortunately for the trade sector, most South Africans, led by the government, behaved as if life was going back to normal as the levels fell on a monthly basis from the outset. Most of us never learned proper behaviour for a pandemic because the government did not require it, and effectively conveyed the message that all was fine by going to Level 1 not long after ending Level 5. The same holds true for movies: streaming has expanded

<sup>313</sup> H Bhorat, F Steenkamp, C Rooney, N Kachingwe & A Lees 'Understanding and Characterizing the Services Sector in South Africa: An Overview' *United Nations University World Institute for Development Economics Research Working Paper* (2016), accessed at <http://dx.doi.org/10.35188/UNU-WIDER/2016/201-4>.

<sup>314</sup> I Booth, D Smith & T Spira 'Go Big or Go Online: Retail's Uncertain Post-Covid Future – Is Covid-19 Going to Further Consolidate One of the Most Concentrated Retail Markets in The World?' *Investec News* (23 June 2020), accessed at [https://www.investec.com/en\\_za/focus/economy/go-big-or-go-online-retails-uncertain-post-covid-future.html](https://www.investec.com/en_za/focus/economy/go-big-or-go-online-retails-uncertain-post-covid-future.html).

the array of movies and shows available – and also eliminates the risk of exposure. Not all upper-end retailers are alike. Whereas food and pharmaceutical providers, and other retailers with strong online and delivery services will survive, many SMMEs will not. In a time of great uncertainty about future employment, and wage freezes in both the public sector and private sector, one would expect expenditure on new and fine apparel, for example, to drop precipitously. The subsequent failure of restaurants, hotels, airlines and SMMEs will result in increased levels of unemployment across all classes. In sum, the ability to substitute safer and less expensive online products and services for riskier forms of entertainment will add to significant long-term – if not permanent – unemployment across a large number of retail and service firms.<sup>315</sup>

Here’s the biggest takeaway from the pandemic-induced shifts in spending behaviour (and thus unemployment as it relates to trade sector and automation):

We have not encountered a market yet where people start to use online and then go back to traditional retail. Once you find the convenience, your patterns don’t change, and you see it with actually almost any type of online transition.<sup>316</sup>

If, however, there’s a silver lining in current retail and service expenditure and employment, then it might be found in in the ‘informal economy.’ As Wegerif writes:

Despite the high concentration of corporate ownership in the food and grocery sector in South Africa, especially when compared to other African countries, the ‘informal food sector’ still accounts for 40 to 50% of sales and is worth around R360 billion (US\$20 billion) a year. This sector – made up of small-scale, owner-operated enterprises who sell food of various kinds, including street traders, hawkers, spaza shops, and bakkie traders – employs more people than the formal food and grocery sector.<sup>317</sup>

Under normal circumstances, Wegerif continues:

Around 70% of households in poorer neighbourhoods in South Africa source some food from the informal sector. This is because these enterprises, in South Africa and elsewhere make food accessible through: 1) selling close to where people live and work; 2) the convenience of long operating hours; 3) selling in flexible quantities that respond to what people can afford; 4) lower prices than large formal retailers; and 5) providing interest free credit to regular customers. In research on fresh-produce supplies to the city of Johannesburg, I have found street traders selling vegetables – such as tomatoes, onions, and cabbage – at half or one-third of the price of the same produce at supermarkets.<sup>318</sup>

Under normal conditions, informal food retailers and the services that they provide in disadvantaged communities would be a win-win. Indeed, countless government initiatives and public-private partnerships have offered the possibility of enhancing the multiplier effect in the informal economy by injecting more money into small businesses (so that they might expand) as well as providing educational and logistical support to community

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<sup>315</sup> *ibid.*

<sup>316</sup> *ibid.*

<sup>317</sup> M Wegerif ‘“Informal” Food Traders and Food Security: Experiences from the Covid-19 Response in South Africa’ *Food Security* (2020), accessed at <https://doi.org/10.1007/s12571-020-01078-z>. See also S Greenberg ‘Corporate Power in the Agro-Food System and the Consumer Food Environment in South Africa’ (2017) 44 *The Journal of Peasant Studies* 467; S Greenberg ‘Corporate Concentration and Food Security in South Africa: Is the Commercial Agro-Food System Delivering?’ *PLAAS* (2015).

<sup>318</sup> *ibid.*

members (i.e., women) who have historically been excluded from running their own operations.<sup>319</sup>

That such support has been slow in coming is one thing. What to make of it now in December 2020 is quite another. Unemployment surpassed 50% during 2020, and, as is quite evident, the rates of unemployment are far, far higher in poor, marginalised communities. As we have seen, food insecurity has skyrocketed, and various government agencies have failed to deliver food parcels or unnecessarily delayed new unemployment grants necessary to stave off hunger. Thus, while SMMEs and informal retailers may provide something of a buffer for poor communities under ‘normal’ conditions of deprivation, they are more likely to go bankrupt under current pandemic-induced circumstances than their larger counterparts in the formal sector of the economy.

For example, the R200 billion in loans in the government’s COVID-19 stimulus relief package designed to keep these critical businesses afloat has barely been touched (2%).<sup>320</sup> That failure stems in part from the stipulation of conditions (including surety) that made it hard for SMMEs to take on ‘crisis’ financing. In addition, the narrow margins offered banks for overseeing the distribution of the loans hardly made it worth their while to promote them.<sup>321</sup>

The result has been the obverse of a multiplier effect. Instead of R200 billion being moved from one set of recipients of the government spend to another set of recipients, it has just sat in the state’s coffers. If anything, a poorly conceived programme for SMME relief will cause less money to circulate in disadvantaged communities. As a result, we might see these SMMEs falter and take their employees and their supply chains down with them.

#### **D. The Difference between Permanent Technological Unemployment in Developed Countries and Developing Countries such as South Africa – On Automation and Global Value Chains**

Why, beyond the factors discussed above, do figures surrounding permanent technological unemployment look so different in developed economies and emerging economies such as South Africa? In the Netherlands and the United States, for example, automation increases the likelihood that workers will be driven away from their jobs for three distinct reasons. First, automation – and the diminution of the labour component of work – results in a combination of job elimination, movements of employees to less-rewarding tasks and decisions by employees to quit due to loss of job satisfaction.<sup>322</sup> Second, a recent working paper finds that ‘firm-level automation increases the probability of workers separating from their employers and decreases days worked, leading to a 5-year cumulative wage

<sup>319</sup> ‘Connecting Smallholders to Markets: An Analytical Guide’ *International Civil Society Mechanism, Hands on the Land Alliance for Food Sovereignty* (2016).

<sup>320</sup> ‘South Africa’s R200 Billion Coronavirus Loan Scheme Isn’t Working – Here’s What Happened’ *BusinessTech* (18 June 2020), accessed at <https://businesstech.co.za/news/finance/408343/south-africas-r200-billion-coronavirus-loan-scheme-isnt-working-heres-what-happened/>.

<sup>321</sup> *ibid.*

<sup>322</sup> J Bessen, M Goos, A Salomons & W Van den Berge ‘Automatic Reaction - What Happens to Workers at Firms that Automate?’ *Boston University School of Law, Law and Economics Research Paper* (1 January 2019), accessed at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3328877](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3328877).

income loss of 11% of one year's earnings.<sup>323</sup> In addition, 8% leave and fail to return to work.<sup>324</sup> Third, the initial shake-out from the COVID-19 induced downturn in developed economies suggests that many of the lost jobs at the bottom end of the spectrum will vanish entirely.<sup>325</sup>

South Africa's permanent technological unemployment crisis flows from a more intractable set of problems. It has been suggested that South Africa should concentrate upon the integration of their domestic value chain into global value chains (GVCs) in order to squeeze out additional jobs and increase productivity.<sup>326</sup> But for all the talk in the 2012 NDP, precious little has been done by the ANC government in the subsequent eight years to design the requisite regulatory interventions that would link low-skilled workers to small and medium-sized firms to larger institutions and finally to foreign and international firms in order 'to boost employment and productivity' in agriculture, manufacturing and financial services. Such a grand socio-economic policy experiment – undertaken in many East Asian countries – would recognise the dominant role GVCs play in most successful 21st century economies. In terms of GVC policy, 'capacity, and imports matter as much as, if not more than, exports.'<sup>327</sup> What truly generates growth and employment are the multiplier effects created by the integration and the flow of skilled workers, goods and domestic capital investment that enables all boats to rise.

GVCs might have been a way out for South Africa but for several factors that we have already noted. First, the truly skilled workers necessary for a knowledge economy barely exist. Second, when extant industries are integrated, they tend to form domestic cartels. These cartels have, under colonial, apartheid and post-independence ANC-rule, benefitted from tender processes that have favoured the few and privileged over the many and marginalised. Thirdly, the absence of domestic investment means that an extremely low number of new firms, industries or jobs are created. Finally, limits on both R&D and a fragmented manufacturing sector limits the ability of South Africa to follow the GVC-driven success of other BRICS nations, such as China and India, whose ability to combine competitive costs of production with high technology make their economies more competitive.

One might think that the COVID-19 pandemic provides the optimal moment for South Africa to turn a signal weakness into a potential strength and to delink from GVCs while building domestic value chains. This line of argument fundamentally misunderstands the benefits of GVCs and trade. As Pinelopi Goldberg has noted:

[H]aving multiple sources spread across countries improves resilience. Rather than being 'only as strong as its weakest link,' a global supply chain is actually more robust, because it can fix broken links by replacing a source in one stricken country with an alternative source in another country. In reality, domestic supply chains are more robust only in highly unlikely scenarios where all other countries are simultaneously hit by a negative shock. If you are the only one

<sup>323</sup> *ibid.*

<sup>324</sup> *ibid.*

<sup>325</sup> J Barrero, N Bloom & S Davis 'COVID-19 is also a Reallocation Shock' *Working Paper No. 2020-59, Becker Friedman Institute, University of Chicago School of Business* (May 2020) 5.

<sup>326</sup> D Taglioni, D Winkler & J Engel 'Making Global Value Chains Work for Development in the Age of Automation and Globalization Skepticism' in J Keane and R Baimbill-Johnson (eds) *Future Fragmentation Processes: Effectively Engaging with the Ascendancy of Global Value Chains* (2018) 180.

<sup>327</sup> *ibid.*

not afflicted by a global crisis, it obviously helps to have production located at home. In the case of a pandemic, every country is affected, but outbreaks tend to peak at different times. When the [United States or South Africa] is facing the worst of the crisis, other countries may have already flattened their epidemic curves, and can therefore serve as a source of trade – and of resilience.<sup>328</sup>

Take China. It came out of the first wave of the pandemic earlier than most other hard-hit countries and was able to resume production quickly in a number of critical sectors. In particular, China's ability to provide PPEs to every nation that required them almost eliminated worldwide scarcity. China now produces over 12 times the number of masks per day than it did prior to the pandemic.<sup>329</sup> That doesn't sound so bad, if you discount the fact that they used forced labour to create and to sell a large number of ersatz N95 masks that look like but do not actually qualify as N95 masks.

Take the new vaccines. First, the actual manufacture of the vaccines will require materials from all over the world – even as they service their production by pharmaceutical companies around the globe. Second, while vaccines vary, virtually all actually require some degree of refrigeration. That means an uninterrupted cold supply chain. New kinds of shipping containers, retrofitted airplanes, trucks and even motorcycles for delivery to hard-to-reach places will also be necessary to deliver vaccines where needed and get us to the 80% immunity threshold that may stem the transmission of the virus (around and around the planet). This process will require cooperation between firms and states of all sizes all over the world if we ultimately wish to put COVID-19 in the review mirror. Of course, the spectre of hoarding vaccines looms large – and is to be more greatly feared if one falls outside any of the GVCs related to production or, more pointedly, to actual control of production.<sup>330</sup>

The recent shock of the pandemic has spawned a number of creative local solutions to global problems. It may also be the case that countries may wish to maintain a certain degree of redundant capacity in some sectors in anticipation of future shocks. But that's the only space in which anti-trade/autarkic arguments make any sense.<sup>331</sup> If, for example,

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<sup>328</sup> P Goldberg 'The New Empty Argument Against Trade' *Project Syndicate* (12 May 2020), accessed at [https://www.project-syndicate.org/commentary/covid19-case-for-global-supply-chains-by-pinelopi-koujianou-goldberg-2020-05?utm\\_source=Project+Syndicate+Newsletter&utm](https://www.project-syndicate.org/commentary/covid19-case-for-global-supply-chains-by-pinelopi-koujianou-goldberg-2020-05?utm_source=Project+Syndicate+Newsletter&utm).

<sup>329</sup> K Bradsher & A Swanson 'The U.S. Needs China's Masks, as Acrimony Grows: Beijing Has Signaled a Willingness to Supply the US as its Outbreak Spreads' *The New York Times* (23 March 2020), accessed at <https://www.nytimes.com/2020/03/23/business/coronavirus-china-masks.html>.

<sup>330</sup> T Bollyky & C Bown 'Vaccine Nationalism Will Prolong the Pandemic' *Foreign Affairs* (29 December 2020), accessed at <https://www.foreignaffairs.com/articles/world/2020-12-29/vaccine-nationalism-will-prolong-pandemic>.

<sup>331</sup> When it comes to mass movements of people into places unprepared for their arrival, or climate change, or pandemics, or cyberwar and the abuse of surveillance technology, those who argue for delinking South Africa from GVCs in the name of deglobalisation – or the broad tent of anti-neoliberals – appear to have something of merit to say. But let's flip that argument on its head:

Blocking imports can cause inflation, reduce consumer choice, slow the pace of innovation, and lead others to retaliate with import restrictions of their own. Blocking ideas can stifle creativity and impede the correction of policy mistakes. And blocking people at the border can rob a society of talent and needed workers, while contributing to the misery of those forced to flee as a result of political or religious persecution, war, gangs, or hunger.

R Haass 'Deglobalization and Its Discontents' *Project Syndicate* (12 May 2020), accessed at [https://www.project-syndicate.org/commentary/deglobalizaton-discontents-by-richard-n-haass-2020-05?utm\\_](https://www.project-syndicate.org/commentary/deglobalizaton-discontents-by-richard-n-haass-2020-05?utm_)

South Africa wishes to attend to the health needs of persons living with HIV or TB, or to continue to vaccinate its children against a panoply of deadly illnesses, then maintaining its role in the global value chain for pharmaceuticals makes more sense than trying to build plants for generics with money it does not possess or producing off-patent drugs with expertise it does not enjoy.

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source=Project+Syndicate+Newsletter&utm. Were we to ignore Haas's warnings, it would give us no chance whatsoever of even beginning to provide organised responses and solutions to the many wicked problems surveyed in this book.

## CHAPTER V

### Conclusion – ‘Doing the Best We Can’

There ought to be, behind the door of every happy contented man, someone standing with a hammer continually reminding him with a tap that there are unhappy people; that however happy he may be, life will show him her laws sooner or later – disease, poverty, losses, and no one will see or hear, just as how he neither hears, nor sees others.

– A Chekhov ‘Gooseberries’ (1898)

*Myron:* Sir, on page 79, Mr. Propter says that the stupidest text in the Bible is: ‘they hated me without a cause’. Does he mean the Nazis were right to hate the Jews? Is Huxley an anti-Semite?

*George:* No, Mr. Huxley is not an anti-Semite. The Nazis were obviously wrong to hate the Jews. But their hating the Jews was not without a cause ... But the cause wasn’t real. The cause was imagined. The cause was FEAR. Let’s leave the Jews out of this for a moment and think of another minority. One that can go unnoticed if it needs to ... There are all sorts of minorities, blondes for example, but a minority is only thought of as one when it constitutes some kind of threat to the majority. A real threat or an imagined one. And therein lies the FEAR. And, if the minority is somehow invisible ... the fear is even greater. And this FEAR is the reason the minority is persecuted. So, there always is a cause. And the cause is FEAR. Minorities are just people. People ... like us. I can see that I’ve lost you a bit. You know what? Let’s forget about Huxley today. Let’s just talk about fear. Fear, after all, is our real enemy. Fear is taking over our world. Fear is being used as a tool of manipulation in our society. It’s how politicians peddle policy and how Madison Avenue sells us things that we don’t need. Think about it. Fear that we’re going to be attacked, fear that there are communists lurking around every corner, fear that some little Caribbean country that doesn’t believe in our way of life poses a threat to us. Fear that black culture may take over the world.

– C Isherwood *A Single Man* (1964) commenting upon  
A Huxley *After Many a Summer Dies the Swan* (1939)

#### A. ‘Doing the Best We Can’ – A Departure Point

This book ends roughly where it began, in Postal Code 2090, in Alexandra and Bramley North. Henry Nkulu operates transfers and shuttles (under his eponymously named business) from 1365 South Africa Street, Alexandra, 2090. After a six-month sojourn at Wesleyan University, I needed his help lugging a ton of books and two suitcases back home.

We talked about his two daughters, both at the University of Johannesburg, one ready to graduate with a degree in engineering, the other starting and struggling (as is often the case) with a programme that emphasised economics and finance. Henry turned to me and said: ‘There are three important things in life. Education. Education. Education.’ He could not have sounded more like my father. We talked about people that we both knew. Martin Brassey, SC. I’ve known Martin since I arrived in South Africa in January 1993. We both taught at the University of the Witwatersrand School of Law. Martin eventually returned

to the bar full time. Years later we became golfing buddies. First, we played Parkview, once home to a sign that read ‘No Jews, No Dogs’ – a convenient, lovely track close to our respective homes. We moved on, me as the academic sidekick with plenty of time on his hands, to more exclusive venues such as the River Club. (The River Club was built so that the Rand Lords of early 20th century and the rich and powerful today would never have to wait to tee off. A true luxury.) Henry knew Martin from his own days as a caddy at the club well over 14 years ago.<sup>1</sup> Though Martin had retired from practice, Henry seemed to think that he had recently been retained by Jacob Zuma, and wondered about Martin’s choice of clients. I explained that ‘the cab-rank rule requires an advocate to accept any work in a field in which they profess themselves competent to practise, at a court at which they normally appear, and at their usual rates.’<sup>2</sup> Maybe Martin was curious. Or maybe it was apocryphal. I’d been gone six months. Henry then went on to describe his own accomplishments as a golfer. They encompassed a club-championship with a first prize of an opulent trip to Dubai. When a wealthy patron at the River Club found out that Henry could not take his wife, his benefactor paid for her too. Who was the caddy and who was the patron in this car began to shape our conversation.

Henry then recalled another interaction with a mutual acquaintance – Dikgang Moseneke. I had mentioned that the former Deputy Chief Justice had allowed Martin and I to play through his foursome at the River Club. Under immense pressure, I parred and birdied the next two holes under his gaze. Henry recalled being dressed down – along with other caddies at the club – by the former Deputy Chief Justice for continuing to use their English monikers rather than their African forenames. That’s pressure.

The conversation turned, as it always does, to politics. Henry hadn’t voted for the ANC since 1994. He was enamoured with the Economic Freedom Fighters’ demand for land – even if it wasn’t the most pressing need and even if the Constitution allowed for ‘expropriation without compensation’. He then wryly noted that we both lived in ‘Sandton’. When I asked how things were in Alex itself, Henry veered into the popular narrative that too many foreigners had taken up residence and, on top of that, found employment for which South Africans were surely entitled. As we pulled up to my modest flat in a rather heterogenous complex, he obliquely and casually managed to raise questions of entitlement. Par for the course.

Despite all that he had accomplished, Henry wanted to know when the promises of full emancipation – roughly equal work for roughly equal pay for all – would come to fruition. I deferred to him. I asked – ‘What is to be done?’ Henry had a clear and unequivocal answer. The only way to bring about meaningful change is to make the country ‘ungovernable’. He could see no other option than to employ the same blueprint for revolution that had served his generation in the 1980s and brought about formal change from 1990 onwards.

If I had wanted to do so, I could have proffered a different ending to our conversation – about two worlds in such intimate proximity, and yet still so very far apart. I might have reminded him of what he said at the outset about the importance of education. He

<sup>1</sup> As we traversed Henry’s career as a caddy throughout the 1980s and 90s, I couldn’t help but be reminded of one of the first books that I read about South Africa. In preparation for a (stillborn) internship at the Legal Resources Centre in the summer of 1989, my Columbia Law School friend and classmate, Jonathan Klaaren, suggested that I read Joseph Lelyveld’s *Move Your Shadow* (1985). The recollection brought the moral salience of everyday life in the country, and the ethical charge of every encounter, back into our car.

<sup>2</sup> ‘Cab-Rank Rule’ Wikipedia, accessed at [https://en.wikipedia.org/wiki/Cab-Rank\\_Rule](https://en.wikipedia.org/wiki/Cab-Rank_Rule).

had rightly taken justifiable pride in the fact that his two daughters will graduate from a first-class institution, having overcome (almost) insuperable odds, and will enter the formal economy in fields that that would allow them to make discernible contributions to the country.

Henry wanted to be heard. He wanted his grave disappointment with the status quo to register with me.

One might think that Henry and I held vastly different views about the country's future. Surely not. To make the country 'ungovernable' as conditions continue to deteriorate due to permanent technological unemployment, COVID-19, climate change, several other wicked problems and ongoing problems of collective action mirrors Henry's stance toward employing social implosion as a means for bringing about radical change.

What's the difference?

If you have read this far, then you might have reached the conclusion that this book's answer to that century-old question – *What Is to Be Done?* – is: 'absolutely nothing'. Not quite.

My friend, the philosopher, Thad Metz once called me an imperfectionist at a book launch for a prior work. That sounds about right, even if that monograph offered a far more optimistic theory about why things happen – from soup (consciousness) to nuts (politics) – and how we might make better decisions and achieve better outcomes in so far as is possible in South Africa. Seven years down the road, the optics have changed dramatically. We find ourselves on a precipice (if not already at the periphery). Different historical moments elicit different responses – even amongst imperfectionists.

This difference does not mean 'nothing can be done'. It's just that my appraisal is substantially more modest – a modesty born of justifiably objective pessimism about what has happened in the world and in South Africa over the last seven years. As a result, the conclusion echoes a familial *cri de coeur*: 'I'm doing the best that I can.' That might not be such a bad place to start.

My grandmother, born in 1896, started to traverse the world in 1913. Bertha left Baranovichi<sup>3</sup> (in what is now Belarus,<sup>4</sup> but was then part of a Jewish Bantustan known as the Pale of Settlement<sup>5</sup>) and first headed east through the Ukraine and then southwest

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<sup>3</sup> According to Shlomo Kless:

Baranovichi (in Polish: Baranowicze), in the Novogrudok district of Byelorussia (now Belarus), was founded in 1883. In the period between the two World Wars (1920 – 1939), Baranovichi was under Polish rule. In September 1939, the Red Army invaded the territory, commencing the Soviet occupation. With the German attack on the Soviet Union on June 22, 1941 ('Operation Barbarossa'), the German army poured into the area. Within five days, Baranovichi was conquered. At the start of the city's occupation by the Germans there were some 12,000 Jews living there, of whom about three thousand were refugees from Western Poland.

S Kless 'The *Judenrat* of the Baranovichi Ghetto, 1942–1943' accessed at <https://www.jewishgen.org/yizkor/Baranovichi1/bar110.html>.

<sup>4</sup> Belarus has always been a political and economic backwater. Even with the fall of the Berlin Wall, it still has had no experience with inclusive democracy – only the 26-year-old authoritarian rule of Alexander Lukashenko. M Carpenter & V Kobets 'What Russia Really Has in Mind for Belarus: And Why Western Leaders Must Act' *Foreign Affairs* (8 September 2020), accessed at <https://www.foreignaffairs.com/articles/europe/2020-09-08/what-russia-really-has-mind-belarus>.

<sup>5</sup> According to Wikipedia, the Pale of Settlement was a region of Imperial Russia with varying borders that existed from 1791 to 1917, in which permanent residency by Jews was allowed and beyond which Jewish

through the Levant. After a brief sojourn in Palestine in 1917, she decamped to the United States (whilst its doors still remained open).<sup>6</sup> Following a brief layover in Philadelphia, she hooked up with two sisters already in Brooklyn. With no formal education, and extremely limited English, she entered the textile industry and became a member of one of the largest unions in the United States – the International Ladies Garment Workers Union (ILGWU). She married a feckless character, who would come and go. He left her three sons, and no remittance. In 1929, the stock market crashed, and bank runs soon ushered in the Great Depression. With only intermittent work, she battled to feed three malnourished young boys. The absence of employment and the extent of their depravation led her to attempt suicide – by turning on the kitchen stove’s gas. She held my then two-year old father in her arms. Had my uncles not arrived home in time, I would not be here. Less than a decade later, she witnessed from afar the extermination of rest of her family (all still in Baranovichi) during World War II.<sup>7</sup>

As a passive, but deeply affected, party to these events, my father adopted the following twofold approach to life: ‘Every person possesses intrinsic moral worth’ and ‘I’m doing the best I can.’ My imperfect ‘doing the best he can’ father suffered an extended period of unemployment through my final two years of high school. We didn’t have a pot to piss in, as the saying goes. (Although we did have ablution facilities, something I never take for

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residency, permanent or temporary, was mostly forbidden.

Most Jews were still excluded from residency in a number of cities within the Pale as well. A limited number of Jews were allowed to live outside the area ... The archaic English term *pale* is derived from the Latin word *palus*, a stake, extended to mean the area enclosed by a fence or boundary. The Pale of Settlement [encompassed] all of Belarus, Lithuania and Moldova, much of Ukraine, parts of eastern Latvia, eastern Poland, and some parts of western Russia.

‘Pale of Settlement’ *Wikipedia*, accessed at [https://en.wikipedia.org/wiki/Pale\\_of\\_Settlement](https://en.wikipedia.org/wiki/Pale_of_Settlement).

<sup>6</sup> The 1924 Immigration Act or the Johnson-Reed Act supplanted earlier acts to effectively ban all immigration from Asia and set a total immigration quota of 165 000 for countries outside the Western Hemisphere, an 80% reduction from the pre-World War I average. Quotas for specific countries were based on 2% of the U.S. population from that country as recorded in 1890. As a result, populations poorly represented in 1890 were prevented from immigrating in proportionate numbers – especially affecting Italians, Jews, Greeks, Poles and other Slavs ... [T]he purpose of the act was to preserve the ideal of U.S. homogeneity. Office of the Historian ‘Immigration Act of 1924’ *Department of State*, accessed at [https://en.wikipedia.org/wiki/Immigration\\_Act\\_of\\_1924#cite\\_note-gov-2](https://en.wikipedia.org/wiki/Immigration_Act_of_1924#cite_note-gov-2).

<sup>7</sup> According to Kless:

Immediately upon the Germans’ entry into Baranovichi, German soldiers – together with local Poles and Byelorussians – began breaking into Jews’ homes, intent on robbery, looting, and abusing their occupants. [Soon thereafter, the town’s 12,000 Jews found themselves herded into a tiny, highly-concentrated ghetto.] ... The ghetto ... had two gates: the main gate on Wilenska Street, and another at the cemetery. Whilst Germans used some of the ghetto’s inhabitants for forced labour, the extermination of its inhabitants occurred in three phases. ‘On March 4, 1942 ... the [Byelorussian-appointed] commissar approached the Judenrat’s Chief of Police Chaim Weltman to send 15 policemen to the ‘Green Bridge’ to ‘keep order’ as they rounded up 3,000 Jews deemed too old or feeble – ‘useless’. Weltman turned to all the policemen, saying, ‘Boys, everyone’s getting on the truck.’ Weltman was first to board the truck. All forty of his men got on after him. When they finished their task of burial at the site of the mass killings, they themselves were shot in the back ... by the Byelorussians ... For ten days in December, the ghetto was cut off and sealed, and during that time the Germans took 6,000 Jews to the killing site near the village of Grabowiec ... On December 17, 1942, hundreds of Gestapo men burst into the ghetto along with Byelorussian, Ukrainian and Latvian police. The rest [3,000] were loaded onto trucks and taken to the Grabowiec pits, where they were put to death ... [T]he Germans continued the third round of exterminations until Baranovichi was declared ‘Judenrein’ [Cleansed of Jews].

granted in South Africa.) Recreating himself in his late 40s and early 50s was no mean feat. He never gave up on himself, perhaps because he refused to give up on my brother and me.

Ultimately, he created a tiny, hole-in-the-wall furniture store in the Bronx, with Lenny and Mary, a mosaic of races, sexes and religions, that produced one baby and a stable source of middle-class income for our family. (This act required some business acumen. It could not be readily replicated today in a wired, COVID-19 world that does little more than allow desperate men to deliver the groceries as well as complete gyms to your doorstep, assuming you can afford them.<sup>8</sup>) The business plan mirrored his underlying philosophy of treating others with an unerring sense of their basic dignity. The polyglot, multi-ethnic community around the store accorded him the same form of recognition. Dignity as practised by father sounds a bit like karma or ubuntu. When someone walked through the door, my father met them, but at a respectful distance: ‘Hello, please look around. And if you need anything, or have a question, I’ll be right over there.’

As for his second credo, ‘I’m doing the best that I can’, it’s a refrain that I heard over and over again. While often maddening when it seemed to fall short of the mark, I came to appreciate its wisdom over time. Only when I came to write the conclusion of this book did I feel the full weight of his words.

I have not told the stories of my friend Henry, my grandmother Bertha or my father Ephraim to entertain. They each reflect, in their own way, classic responses to fear and sometimes violence,<sup>9</sup> as well as the conditions of deprivation which give rise to that fear. If you are human, then you’ve probably experienced depression at one point or another

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<sup>8</sup> Desperate men will grow more desperate once drones – already granted limited commercial and medical delivery licenses in Switzerland, Australia and the United States – either meet certain extremely high criteria for flight safety or regulators deem socio-economic conditions to warrant lowering the threshold to some figure significantly above accidents by delivery drivers. F Corrigan ‘Drones for Deliveries – From Medicine to Post, Packages and Pizza’ *Dronezon* (20 February 2020), accessed at <https://www.dronezon.com/drones-for-good/drone-parcel-pizza-delivery-service/>; O Wyman ‘Why the Skies Aren’t Filled with Delivery Drones ... Yet’ *Forbes* (7 October 2019), accessed at <https://www.forbes.com/sites/oliverwyman/2019/10/07/why-the-skies-arent-filled-with-delivery-drones-yet/#a4f2c993bc99>.

<sup>9</sup> Sigmund Freud began to develop the psychoanalytic literature around fear, and group pathologies, around the end of World War One. Freud’s interest in group aggression first appears in a 1917 essay entitled ‘The Taboo of Virginity’. In this essay, Freud asserts that ‘it is precisely the minor differences in people who are otherwise alike that form the basis of feelings of strangeness and hostility between them.’ What puzzled Freud was the fact that such differentiation ‘should be accompanied by such large amounts of anxiety.’ Put differently, and still in terms of his clinical practice, Freud asked:

Why is it that men’s identities depend on the constitution of woman as an object, not merely of desire, but of fear? Perhaps this dread on the fact that woman is different from man ... forever incomprehensible and mysterious, strange and therefore apparently hostile. The man is afraid of being weakened by the woman, infected with her femininity and of then showing himself incapable ... [W]hy is it that minor difference should be strange *and therefore* threatening?

Freud broadened his scope several years later in his essay ‘Group Psychology and the Analysis of the Ego’. From his earlier work, as we know or have otherwise absorbed, intimate relationships – friendship, marriage, and, of course, the relationships between parents and children – *can* elicit emotions of hostility and suspicion. The same phenomenon, Freud contends, are apparent in relationships within and between societies and nations. Freud writes:

Of two neighboring towns each is the other’s most jealous rival; every little canton looks down upon the others with contempt. Closely related races keep one another at arm’s length; the South German cannot endure the North German, the Englishman casts every kind of aspersion upon the Scot, the Spaniard despises the Portuguese. We are no longer astonished that greater differences should lead to an

in your life. You don't have to be dirt poor or to suffer from disease, discrimination or disability to experience a depressive episode. One standard depressive response is to do nothing at all – just turn over, go back to sleep. Another response is reactive anger. Of course, anger as moments of pique or extended periods of constructive frustration can be objectively justified. The difference between the two forms of anger is that reactive anger manifests as an absence of control, a lack of reflection and a tendency toward physical violence that just seems to explode out of us. While it might initially seem to be a response to a specific external source, reactive anger toward others is generally not about the immediate target of our anger but about something else entirely. Intimate partner violence<sup>10</sup> or xenophobia<sup>11</sup> offer examples of instances in which the object of reactive anger is not an objective cause of the response. Finally, like the last emotion creeping outside of Pandora's Box, a small percentage of persons respond to conditions of deprivation creatively. Creative acts need not be heroic. But they do require a capacity to work through a painful experience in order to produce something constructive.

These three positions are fluid. We move between them. Just as we can return to a normal state of health, following a debilitating illness, we are equally capable of moving from emotionally constructive integration to a recurrence of self-destructive or other-destructive behaviour. The three stories above thus reflect both the negative and the positive vectors of the human condition. While the desire to reduce the world around him to 'ungovernability' might reflect a position of reactive anger on Henry's part, it's hardly his sole response to this world. His creativity enabled him to move beyond the limitations of caddying, to playing tournament golf, to starting his own company and to putting his two daughters through school and university. My grandmother, Bertha, though depressed to the point of attempted suicide and infanticide, didn't ultimately succumb to

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almost insuperable repugnance such as the Gallic people feel for the German, the Aryan for the Semite and the white races for the coloured.

Freud certainly had his hand on the pulse of anti-semitism in Germany and the rest of Europe that gave rise to the Holocaust a decade later, as well as the beastly racist nature of colonialism that had already found beastly and inhuman expression by European powers throughout the late 19th and early 20th century. S Freud *Civilization and its Discontents* (1930) in S Freud *On Sexuality XII* (1930) 305. See also KA Appiah & A Gutmann *Color Conscious* (1996). As Michal Ignatieff notes:

[Such] hostility and intolerance between groups bears no relation to the size of their cultural, historical or physical differences as measured by a dispassionate observer ... [T]he smaller these differences may seem to outsiders, the larger they may loom in terms of insiders' mutual self-definitions.

M Ignatieff *The Warrior's Honor: Ethnic Cleansing and the Modern Conscience* (1997). Freud suggested that such antagonistic self-definition – within individuals as well as within groups – was connected to narcissism:

In the undisguised antipathies and aversion which people feel toward strangers with whom they have to do we may recognize the expression of self-love – of narcissism. This self-love works for the preservation of the individual, and behaves as though the occurrence of any divergence from his own particular lines of development involved a criticism of them and the demand for their alteration.

Freud *Civilization and its Discontents* (1930) in S Freud *On Sexuality XII* (1930) 305.

<sup>10</sup> S Woolman & C Sprague 'Nowhere to Run, Nowhere to Hide: The Absence of Public Policy on Intimate Partner Violence Abrogates the Rights to Health and Bodily Integrity Under the South African Constitution' (2015) 22 *Cardozo Journal Of Law & Gender* 29, accessed at [https://www.researchgate.net/publication/292608218\\_Nowhere\\_to\\_Run\\_Nowhere\\_to\\_Hide\\_The\\_Absence\\_of\\_Public\\_Policy\\_on\\_Intimate\\_Partner\\_Violence\\_Abrogates\\_the\\_Rights\\_to\\_Health\\_and\\_Bodily\\_Integrity\\_Under\\_the\\_South\\_African\\_Constitution](https://www.researchgate.net/publication/292608218_Nowhere_to_Run_Nowhere_to_Hide_The_Absence_of_Public_Policy_on_Intimate_Partner_Violence_Abrogates_the_Rights_to_Health_and_Bodily_Integrity_Under_the_South_African_Constitution).

<sup>11</sup> S Woolman 'Is Xenophobia the Right Legal Term of Art? A Freudian and Kleinian Response to Loren Landau on the Violence in South African Townships' (2011) 21(2) *Stellenbosch Law Review* 285.

that temptation. Limited by language, by origin, by religion, by training, she still managed to see three young men through adulthood and university. My father had ample reason to capitulate – to allow his sense of deprivation as a child, and his exclusion from various institutions in the United States as an adult, to shape his character and identity. After being denied the ability to run my mother’s family business, he found himself unemployed at a period of time when others justifiably depended upon him for those basic goods needed to pursue a life worth valuing. Although he liked to say that ‘any idiot can make it in business’, it still takes both resilience and creativity to find solutions to the brickbats life invariably tosses in our way. My father found his way.

It should be clear – from Chapter II and its reliance on my prior work – that this book doesn’t rest on a thick sense of self-determination or free-will more readily found in self-help books or libertarian manifestos. Most of life is what happens to you ... good luck, bad luck and all those middling states of being that make life as tedious as pushing boulders up a hill only to watch them roll down again. Take our three protagonists above. Henry had help from various benefactors in making it out of the River Club and starting a business of his own (at the right moment in time). My grandmother was lucky enough to make it out of Belarus (at the right moment in time) before the gates to her kind of immigrant shut in the United States. My father turned a work life of self-abnegation into one of quasi-self-actualisation (at the right moment in time). However, had he not been born at a moment when a *public* university training in business was available, or had he not the experience of running a small business, or had he not possessed some degree of community support and acceptance, then his hole-in-the-wall furniture store would not have come into being.

What might ‘I’m Doing the Best that I Can’ mean when set against the backdrop of this book’s largely grim analysis? My grandmother managed to see her three sons through university despite it all. Henry Nkulu has seen his two daughters through university, despite it all. My father gave his two sons the best education that they could possibly have, despite it all.

In keeping faith with their creative approach to life in an often trying and complicated world, I want to return to my imperfectionist ways when suggesting solutions to solving the problems adumbrated in these pages. This method eschews the big idea approach: As with Henry’s visceral response, big ideas are, at least superficially, revolutionary; and they often demand that we tear down every institution, before we can build them back up. My method reflects a bottom-up approach – commonly associated with experimental governance, development theory, behavioural economics and institutional analysis.<sup>12</sup> Such an approach requires some degree of centralised normative authority in order to produce public goods and a fair social order. However, these approaches all trust individuals – under the right normative and empirical conditions – to employ the local wisdom of the ordinary communities which they inhabit in order to solve, creatively and innovatively, the problems that confront them, individually and collectively. Again, strong centralised authority is still required, as is meaningful information flow and public participation across various

<sup>12</sup> S Woolman *The Selfless Constitution: Experimentalism and Flourishing as Foundations of South Africa’s Basic Law* (2013); R Thaler *Misbehaving: The Making of Behavioral Economics* (2013); R Thaler & C Sunstein *Nudge: Improving Decisions About Health, Wealth, and Happiness* (2008); C Sunstein *How Change Happens: Why Some Social Movements Succeed While Others Don’t* (2018); A Banerjee & E Duflo *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty* (2011).

communities within civil society and appropriate organs of state. (I would define such provision of public goods, information flow and cooperative relationships between citizens, between citizens and their representatives and between tiers and branches of government as ‘democracy’ properly understood.) However, the state is not to be conflated with a radically heterogenous society. It serves that society. Moreover, even states in distress ought to enable the most marginalised member of society to live out some comprehensive vision of the good. To put it in the vocabulary of behavioural economists, Abhijit Banerjee and Esther Duflo: ‘Another thirty-six rupees, an extra fifteen rand, or one more dollar a day, can go a long, long way.’<sup>13</sup>

## B. ‘Doing the Best We Can’ – Creating the Conditions for More Inclusive Democracies Ain’t Easy

When contemplating what the acceleration of permanent technological unemployment means for South Africa’s constitutional democracy, it’s worth considering what a founder of constitutional democracy in the United States, Benjamin Franklin, had to say in 1789:

Our new Constitution is now established, and has appearance that promises permanency. But in this world nothing can be said to be certain, except death and taxes.

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<sup>13</sup> A Banerjee & E Duflo *Good Economics for Hard Times* (2019). However, Banerjee and Duflo also offer the following analysis, that only partially stands up under scrutiny:

Economists (and other experts) seem to have very little useful to say about why some countries grow and others do not. Basket cases, such as Bangladesh or Cambodia, turn into small miracles. Poster children, such as Côte d’Ivoire, fall into the ‘bottom billion.’ In retrospect, it is always possible to construct a rationale for what happened in each place. But the truth is, we are largely incapable of predicting where growth will happen, and we don’t understand very well why things suddenly fire up. Given that economic growth requires manpower and brainpower, it seems plausible, however, that whenever that spark occurs, it is more likely to catch fire if women and men are properly educated, well fed, and healthy, and if citizens feel secure and confident enough to invest in their children, and to let them leave home to get the new jobs in the city. It is also probably true that until that happens, something needs to be done to make that wait for the spark more bearable.

Acemoglu and Robinson’s rather extensive history suggests that states can, if fortunate and if they follow a particular path, move from extractive arrangements to inclusive arrangements in which all boats tend to rise. So, while all four theorists approach their craft with a modesty that reflects the contingent path of history, successful liberal democratic welfare states possess several signal features. They enjoy, as previously noted:

(a) high degrees of centralized authority and ‘a monopoly on *legitimate* violence’; (b) relatively inclusive political institutions that rely on democratic decision-making functions; (c) bureaucracies capable of the rational administration of basic public functions and a reasonably fair distribution of public goods, especially education; (d) a foundational commitment to *the rule of law*, as well as ‘an *unbiased* system of law ... that provides a level playing field within which people can exchange and contract’; (e) ‘inclusive economic institutions ... that allow and encourage participation by the great mass of people in economic activities that make best use of their talents and skills ... that secure private property ... [and] that permit the entry of new businesses and allow people to choose their careers;’ and (f) inclusive economic institutions that ‘pave the way for two other engines of prosperity ... technology and education ... [since] [s]ustained economic growth is almost always accompanied by technological improvements that enable people (labour), land, and existing capital (buildings, existing machines, and so on) to become more productive.

The difference between Banerjee and Duflo and Acemoglu and Robinson may be rather marginal. They might all agree with Acemoglu and Robinson’s conclusion that: ‘Poor countries are poor *because those who have power make choices that create poverty*. They get it wrong not by mistake or ignorance but on purpose.’ (Emphasis added)

Two-hundred-and-thirty years later, the core institutions of the world's oldest constitutional democracy appear to be beyond merely fraying at the edges. As fiction passes for truth, and the big lies get uttered often enough by a rough beast that half the people believe him, things fall apart. While the centre barely held in November 2020, all kinds of signs suggest that it may not continue to hold despite the inauguration of a new President in the third week of January 2021.<sup>14</sup>

Not surprisingly, in 2019, most Americans did not trust the federal government to solve their problems.<sup>15</sup> This level of mistrust flowed from a conscious 50-year plan of the Republican party to hollow out the federal government, to undermine organised labour and to hold back the gains of a civil rights movement (for African-Americans, the feminist movement and the LGBTi movement).<sup>16</sup> Until COVID-19 arrived in February 2020, Nixon's dog whistles and Trump's explicitly neo-Nazi bund rallies and tweets had proven successful. The COVID-19 pandemic – and the 300 000 Americans dead as of December 2020 – should have demonstrated to a majority of Americans that the emperor had no clothes. Moreover, the Bob Woodward audiotapes that caught President Trump lying about the lethality and ease of transmission of SARS-CoV-2 proved that the emperor actually knew in February 2020 that he had lied to the American people – yet he nearly garnered enough Electoral College votes to serve a second term. Let's not forget that President Ramaphosa knew as well, having been properly briefed. Like Trump, Ramaphosa ignored the facts – and presided over two surges – until overflowing hospitals and extremely embarrassing coverage by the international press (depicting the country as a failed state) also demonstrated that he wore no clothes. His response. Bread and circuses, and blaming enemies of the state – in this case, the South African people – for bringing the two tsunamis of infection and death upon themselves.

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<sup>14</sup> C O'Kane 'CDC Director says Face Masks May Offer More Protection against COVID than a Vaccine' *CBS News* (18 September 2020), accessed at <https://www.cbsnews.com/news/covid-face-mask-protection-vaccine-cdc-director/>.

<sup>15</sup> L Rainie & A Perrin 'Key Findings about Americans' Declining Trust in Government and Each Other' *Pew Center for Social Research* (22 July 2019), accessed at <https://www.pewresearch.org/fact-tank/2019/07/22/key-findings-about-americans-declining-trust-in-government-and-each-other/>. 64% displayed a similar mistrust of fellow citizens. However, the same number (75%) who currently mistrust government believed that such trust could be restored with better government. The fall-off in social trust reflects a 16% decrease from the figure of 50% in 2000. D Halpern *Social Capital* (2000). As the number of deaths for COVID-19 passed 100 000 in May 2020 and the unemployment rate reached Great Depression-levels of 20%, the trust numbers appeared to have fallen further still. S Tavernise 'Will the Coronavirus Kill What's Left of Americans' Faith in Washington?' *The New York Times* (23 May 2020). However, Americans elected a Democratically-controlled White House, Senate and House of Representatives in November 2020, thus demonstrating some faith in the federal government to do what the polity required under conditions of significant duress.

<sup>16</sup> D Grohsgal & K Kruse 'How the Republican Majority Emerged: Fifty Years After The Republican Party Hit upon a Winning Formula, President Trump is Putting It at Risk' *The Atlantic* (6 August 2019), at <https://www.theatlantic.com/ideas/archive/2019/08/emerging-republican-majority/595504/>. Less sanguine Republicans deny that there's a distinction. In *It Was All A Lie: How the Republican Party became Donald Trump* (2020), Stuart Stevens rebuffs the thesis that Trump took over the Republican Party, and demonstrates, to the contrary, that the party knowingly and intentionally steered its faithless faithful toward Trump (and the long-standing toxic mix of no federal government, tax cuts for the rich and virulent bigotry).

In 2020, perceptions of mistrust of the government shifted just enough as a result of several dramatic challenges: (1) the COVID-19 pandemic; (2) near depression-levels of unemployment; (3) climate change; and (4) further instances of police brutality and a resurgent Black Lives Matters movement well-placed to press for changes in structural inequality.<sup>17</sup> The United States, under a new centre-left government, could move back toward inclusive political and economic institutions or continue on its downward extractive trajectory. That history continues to unfold before us. The ability of the American people to respond, rationally, to a pandemic, a crushed economy, climate change, structural inequality and minor matters such as permanent technological unemployment will be tested: even as a majority voted in Democrat Joseph Biden as President. Given the cold civil war in the Republic, it's simply too early to tell whether the 2020 elections constitute a 'critical juncture' that will move the nation in the right direction – toward a more just and equitable social order.

Given South Africa's brutal history, perversely high levels of inequality, failure to deliver services designed to repair the depredations of the past and growing awareness of corruption between political and social elites, the inter-group trust numbers here remain as bleak as ever.<sup>18</sup> Moreover, 30-year-old ANC policies designed to advance the interests of the party and the pecuniary interests of its members remain an animating strategy,<sup>19</sup> even as the Zondo Commission continues to peel back layer after layer of corruption.<sup>20</sup> At

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<sup>17</sup> Trust in the Federal Government has not followed the 2019 course. Indeed, it's the very failure of the Trump Administration to govern that has led the electorate to coalesce around a more progressive set of normative/trust-building beliefs: 62% to 20% believe the Democratic nominee Joe Biden would better handle racial inequality; 58% to 35% believe the Biden would improve access to healthcare and insurance; 59% to 35% are convinced that Biden would better respond to the COVID19-pandemic. Thus, this acknowledgement that a strong federal government is necessary to solve fundamental social and economic fissures suggests that trust can be rebuilt over time – and this set of historical circumstances has forced individuals and communities to take a harder look at pre-existing beliefs about one another and the need for a stronger state to solve long-standing problems regarding the unfairness of the social order. 'New Polls Show a Majority of Voters Trust Biden over Trump' *The New York Times* (15 July 2020), accessed at <https://www.nytimes.com/2020/07/15/us/elections/biden-vs-trump.html>

<sup>18</sup> M Ndinga-Kanga, H Van der Merwe & D Hartford 'Forging a Resilient Social Contract in South Africa: States and Societies Sustaining Peace in the Post-Apartheid Era' (2020) 14 *Journal of Intervention and Statebuilding* 22. While the South African Constitution creates the space for the progressive realisation of socio-economic rights, the polity itself has failed to translate that framework into a political arrangement that produces equitable service delivery or a fair distribution of both employment and wealth. The state's inadequate implementation of socio-economic policies has contributed both to the weakening of vertical relationship between state and society and the declining legitimacy of the state's attempts to support inter-group cohesion. David Halpern recorded levels of social trust of 15% in 2000. D Halpern *Social Capital* (2000).

<sup>19</sup> M Thamm 'ANC Goes to Ground after *New York Times* Exposé on Deputy President Mabuza' *Daily Maverick* (7 August 2018), accessed at <https://www.dailymaverick.co.za/article/2018-08-07-anc-goes-to-ground-after-new-york-times-expose-on-deputy-president-mabuza/>.

<sup>20</sup> R Renwick *How to Steal a Country: State Capture and Hopes for the Future in South Africa* (2018); M Sehloho 'Zondo Commission into State Capture to Start Hearings Today' *702 News* (20 August 2018), accessed at <http://www.702.co.za/articles/316020/zondo-commission-into-state-capture-to-start-hearings-today>; M Sehloho 'Zondo Commission Resumes, Popo Molefe Returns to Speak about Corruption at Prasa' *702 News* (29 June 2020), accessed at <https://www.702.co.za/features/296/state-capture-inquiry/388209/zondo-commission-resumes-popo-molefe-returns-to-speak-about-corruption-at-prasa>.

least some of this fall in vertical and horizontal trust in both the United States and South Africa can be tied to various socio-economic problems identified throughout this book.

### *Intractability*

Many of South African's systemic problems have proven intractable – either because of poor political choices, patronage or political paralysis. Recall that we ranked 47th out of 66 emerging economies in terms of fiscal stability in early 2020. That figure will likely be revised downwards given the state's inability to manage the economy or two waves of COVID-19. Of 180 nations assessed by Transparency International in 2019, we were ranked 70th – 'very corrupt'.<sup>21</sup> Of the mere 75 countries that count at democracies, South Africa managed to pull in at 40 according to the Democracy Index 2019 analysis.<sup>22</sup> Our autocratic government's rule by fiat and decrees throughout most of 2020 – and without transparency or accountability – under the Disaster Management Act 57 of 2002 may also cause both Transparency International and the Democracy Index to revise our status downwards.

Let's look at one kind of intractable problem – gender inequality. Amartya Sen in his landmark 1990 article – '100 Million Women are Missing' identified a wide array of barriers that turned 100s of millions of women into second class citizens and that led to the premature deaths of 100 million.<sup>23</sup> He showed that cultural, social, economic and legal practices from infanticide to abandonment and sexual trafficking, to unequal access to education, property ownership, healthcare, food and other basic goods vastly restricted the capabilities and opportunities of girls and women, and ultimately led to higher mortality rates than boys and men. Despite 25 years' worth of enhanced understanding of these impediments, and meaningful success in addressing many of them, Deborah Ray demonstrated that 200 million women were 'missing' as of 2015.<sup>24</sup> Knowledge may be power. However, without wise political choices, and the elbow-twisting required to undo long-standing cultural, ethnic, religious and racial bias in social and economic institutions, such knowledge leads at best, in a rather haltering fashion, towards progress.

In other words, one can easily enough identify the wicked problems addressed in this book. Solving them will take sustained *collective* and *global* commitments over time. Despite their urgency, their very nature defies quick resolution. Over 75 years have passed since J Robert Oppenheimer, one of the physicists who led the Manhattan Project's creation of the first nuclear weapons, watched the initial explosion of 'Trinity' in the New Mexican desert. As Oppenheimer took in what he had wrought, he quoted the Bhagavad Gita: 'Now I am become Death, the destroyer of worlds.' During those 75 years, humanity managed to edge 17 metaphorical minutes away from nuclear Armageddon (in the 1980s

<sup>21</sup> Transparency International 'South Africa' *Corruptions Perception Index* (2019), accessed at <https://www.transparency.org/en/countries/south-africa>.

<sup>22</sup> 'The Democracy Index' *Economist Intelligence Unit* (2020), accessed at [https://en.wikipedia.org/wiki/Democracy\\_Index#:~:text=The%20Democracy%20Index%20is%20an,2008%2C%202010%20and%20later%20years](https://en.wikipedia.org/wiki/Democracy_Index#:~:text=The%20Democracy%20Index%20is%20an,2008%2C%202010%20and%20later%20years).

<sup>23</sup> A Sen 'More Than 100 Million Women are Missing' (1990) 367 *The Lancet* 185; A Sen *Development as Freedom* (1999); M Nussbaum *Women and Human Development: The Capabilities Approach* (2000).

<sup>24</sup> D Ray 'Where are All the Women?' *World Economic Forum* (19 October 2015), accessed at [www.weforum.org](http://www.weforum.org).

the Soviet Union and United States cut their arsenals by 90%), only to edge a mere one minute and 40 seconds away on the Doomsday Clock as of January 2020.<sup>25</sup> Failure to contain nuclear proliferation and climate change has led scientists to that grim but utterly rational assessment.<sup>26</sup>

Our ongoing inability to contain COVID-19 – despite the miraculous initial promise of new vaccines – provides yet another cautionary note when it comes to assuming that the suppression and mitigation measures issued by scientists and public health officials will be readily followed by benighted national political leaders and a radically heterogeneous cohort of fellow citizens. As a second wave of cases surges through many countries – in part a function of new variants of the virus that prove to be both highly transmissible and capable of evading the current handful vaccines that have been approved – one can't help but feel discomforted by how interconnected the world is and absolutely amazed by how disconnected from reality so many of us in South Africa and the rest of the world truly are.<sup>27</sup>

South Africans have a government that almost stopped testing entirely in August 2020 – slowing down to as few as 8 000 a day – even as the official total of infected stood at 650 000. (As South Africans felt a second wave start to bite in early December 2020, the official test tallies fell even further to roughly 4 000 per day.) This clearly conscious decision (made in secrecy by a tiny coterie of government officials) proved to be more theatre and misdirection. After Discovery Health (with the assistance of the South African Medical Research Council) correctly assessed the number of infected adults to be roughly 13 million at the end of August 2020, Dr Zwelie Mkhize, Minister of the Department of Health, found himself forced to admit that the actual number was, indeed, at least 12 million.<sup>28</sup> (The undercount on fatalities was deemed by the SAMRC to be  $3.1 \times$  the official count.) At the same time, the President moved the country to Level 1: back to normal. His administration offered no good explanation as to why the testing had slowed to a trickle – or why the infection rate was so high. Indeed, in announcing the move to Level 1 in mid-September 2020, the President bizarrely mentioned our newfound ability to test, trace and isolate. The question as to how *that* might happen went begging. (More theatre.) South Africa had never done so. By early December 2020, Ramaphosa's theatre of the absurd reached new heights. At the same as he took credit in an address to the nation, for a brief fall in infections, he announced that Nelson Mandela Bay had become a hot spot and that the Garden Route to Cape Town – especially during holiday season – would likely follow suit.<sup>29</sup> As to the absence of PPE and other basic necessities in Eastern Cape hospitals or the superspreader events taking place throughout the country, he was noticeably silent.<sup>30</sup> South Africa's problems with honestly addressing the pandemic have proven to be so intractable that it took the international media's revelation of our health system's collapse due to an immense second wave to generate a late December 2020 response that ought to have followed naturally from the reflexive alert system to which we had committed ourselves in March 2020. However, the subsequent revelation of our vaccine procurement fiasco

<sup>29</sup> E Ellis 'Ramaphosa Declares Nelson Mandela Bay a Covid-19 Hotspot – Extra Restrictions in Force' *Daily Maverick* (3 December 2020), accessed at <https://www.dailymaverick.co.za/article/2020-12-03-ramaphosa-declares-nelson-mandela-bay-a-covid-19-hot-spot-extra-restrictions-in-force/>.

<sup>30</sup> N McCain 'Rage Festival Halts Ticket Sales for Plett Gig after Being Dubbed Superspreader Event' *News24* (6 December 2020), accessed at <https://www.news24.com/news24/southafrica/news/rage-festival-halts-ticket-sales-for-plett-gig-after-being-dubbed-super-spreader-event-20201206>.

and the recognition that our own home-grown highly transmissible SARS-CoV-2 variant would challenge the efficacy of extant vaccines barely registered with our political masters. (The rest of the blame can be taken up by a society that continued to party like it's 1999.) Whether the move back to Level 3 on 28 December 2020 – three weeks after the Minister of Health finally conceded that a second wave of infections had overwhelmed the hospitals in four provinces – has any meaningful effect on behaviour remains to be seen. (Anecdotal evidence provided by surveying various neighborhoods and business establishments in Johannesburg suggests that it has not.) The failure to model proper pandemic behaviour for the public in the face of a more transmissible variant has had an additional knock-on effect. As the South African Medical Association noted, the nation cannot afford another lockdown: the government coffers are empty – and can offer no sustained relief to the majority of South Africans – and therefore the people are left with no alternative but to return to work or to starve.

The Level 3 pomp, circumstance and get tough routine on mask wearing leave a great deal to be desired. It certainly doesn't follow the science:

It is natural to think that wearing a mask, no matter new or old, should always be better than nothing. Our results show that this belief is only true for particles larger than 5 micrometers, but not for fine particles smaller than 2.5 micrometers,' said author Jinxiang Xi. The researchers found that wearing a mask with low (less than 30%) filtration efficiency can be worse than without. They developed a computational face mask model using a physiologically realistic model of a person wearing a surgical mask with pleats and then using numerical methods to track the particles through the mask. They examined the behavior and fates of aerosols passing through the mask, onto the face, into the airway, and, eventually, where they deposit in the nose, pharynx, or deep lung. The model showed a mask changes the airflow around the face, so that instead of air entering the mouth and nose through specific paths, air enters the mouth and nose through the entire mask surface but at lower speeds. The lower speed near the face favors the inhalation of aerosols into the nose, so even though masks filter out certain numbers of particles, more particles escaping mask filtration can enter the respiratory tract. They found the filtration efficiency of the three-layer surgical mask can vary from 65%, if new, to 25%, when used, so wearing a 65% mask properly will provide good protection, but wearing a 25% filtration mask can be worse than not wearing one at all.<sup>31</sup>

Needless to say, most South Africans do not wear relatively new three-layer masks – or N95s or FFP2 masks which have even more layers. I do. Thus, instead of limiting the spread of COVID-19, the use of extremely poor filtration masks will, in fact, accelerate the spread of viruses such as SARS-CoV-2 in a resource poor environment such as South Africa. Once again, President Ramaphosa has chosen theatre – the false promise of poorly constructed masks – over the actually science of mask efficacy.

### *Social capital, civil society and non-inclusive, extractive political institutions*

Let's start with an answer to questions surrounding 'intractability'. It begins with the absence of social capital.

Social capital theory looks upon society as a set of institutions and phenomena that contain the seeds for experimentation and new institution-building. At the same time,

<sup>31</sup> J Xi, X Si & R Nagarajan 'Effects of Mask-Wearing on the Inhalability and Deposition of Airborne SARS-CoV-2 Aerosols in Human Upper Airway' *Physics of Fluids* (15 December 2020), accessed at <https://doi.org/10.1063/5.0034580>.

such institutions and phenomena place a break on the manner in which state and non-state actors can undermine existing social networks that provide not only the setting for all meaningful action, and the real and figurative capital that enables individuals, groups, and communities to build new institutions or improve on those organisations and associations that already exist, but they also provide *the stores of trust, stability and mutual understanding that enable us to take collective risks on building something new, something different, and even something revolutionary.*

Social capital is – and is a function of – our collective effort to build and to fortify the things that matter. It is our collective grit and elbow grease, our relationships and their constantly re-affirmed vows. Social capital emphasises the extent to which our capacity to do anything is contingent upon the creation and maintenance of forms of institutions which provide both the tools and the setting for meaningful collective action and the production of necessary public goods. Social capital is often treated as ephemera. That makes sense. It is so hard to see. In fact, it is this elusive quality that makes social capital so fragile. It is made up, after all, not of bricks and mortar, but of relationships and commitments, and the trust, care, mutual respect and loyalty upon which they are dependent.

To overcome the problem of intractability requires the creation of bridging networks that connect different groups to one another. The relationships created through such connections can then be converted into social and economic capital, that might, in turn, create political capital that forms the basis of new political parties and strong political institutions that, in this virtuous circle, lead to greater solidarity<sup>32</sup>. As Robert Putnam wrote, in *Bowling Alone*:

Whereas physical capital refers to physical objects and human capital to the properties of individuals, social capital refers to social networks and the norms of reciprocity and trustworthiness that arise from them. In that sense, *social capital is closely related to what some have called 'civic virtue'*. The difference is that social capital calls attention to the fact that civic virtue is most powerful when embedded in a sense network of social relations. *A society of many virtuous but isolated individuals is not necessarily rich in social capital.*<sup>33</sup>

It follows, on this account, that

Social capital refers to the institutions, relationships, and norms that shape the quality ... of a society's ... interactions. Increasing evidence shows that social cohesion is critical for societies to prosper and for development to be sustainable. Social capital is not just the sums of the institutions that underpin a society – it is the glue that holds them together.<sup>34</sup>

Some 15 years after Putnam's *Making Democracy Work: Civic Traditions in Modern Italy* and a decade after his more depressing tract *Bowling Alone*, Chipkin and Ngqulunga held fast – in 2007 – to the notion that social cohesion ought to be an essential element of

<sup>32</sup> R Putnam (2000) *Bowling Alone: The Collapse and Revival of American Community* 22–23:

Some forms of capital are, by choice or necessity, inward looking and tend to reinforce exclusive identities and homogeneous groups. Examples of bonding social capital include ethnic fraternal organizations, church-based women's reading groups, and fashionable country clubs. Other networks are outward looking and encompass people across diverse social cleavages. Examples of bridging social capital include the civil rights movement, many youth service groups, and ecumenical religious organizations ... Bonding social capital provides a kind of sociological superglue whereas bridging social capital provides a sociological WD-40.

See also R Gittel & A Vidal *Community Organizing: Building Social Capital as a Development Strategy* (1998).

<sup>33</sup> R Putnam (2000) *Bowling Alone* 19. (Emphasis added)

<sup>34</sup> *ibid.*

creating long-term political and economic stability in South Africa.<sup>35</sup> Chipkin (sometimes with Ngqulunga) contended that state institutions – especially in a developing democracy such as South Africa – had an essential role to play in building social capital and promoting social cohesion:

There are several ways in which such linking is achieved. It may be that churches and other religious organisations, working on the basis of charity, are the key linking mechanisms between poor and resource rich(er) communities. Various civil-society bodies, including non-governmental organisations, may play similar roles. Yet the most important institution, in this regard, is the state. This is true for several reasons. In the first place, democratic state institutions, like local governments, are able to realise benefits, not simply for members of ascriptive groups, but for communities of citizens – irrespective of religious affiliation or culture or ethnicity. What matters is the degree to which their operations are inclusive and participatory and the degree to which they are able to invest in and/or leverage resources for poor communities ... In the second place, the democratic State builds networks and creates linkages on the basis of democratic values. In other words, they encourage a culture of democratic citizenship in the country. In this regard, other kinds of ‘linking’ mechanisms, like the church, for example, may have important developmental effects, but they do not necessarily deepen the democratic culture.<sup>36</sup>

On this optimistic and constructive account, the state *had* a critical role to play in ensuring that the associational life of our extremely heterogeneous society buttressed the egalitarian goals, the utilitarian interests and the democratic ends of our polity.

The state could have done so through economic policies – micro-financing or broad-based black economic empowerment (BBBEE). It could have done so (and later did so) through school access policies and school governing bodies. It could have done more to ensure that citizens are given a meaningful opportunity to participate in the decision-making processes that have a direct impact on their lives.<sup>37</sup>

How does this account of democratic nation-building fare under an Mbeki regime that eliminated the Reconstruction and Development Programme in favour of appeals to foreign direct investment (FDI) and the ‘use’ of SOEs as vehicles for ‘development’? Not well. The money flowed out of the country and the SOEs became entities through which the ANC could build party loyalty and engage in rent-seeking behaviour. How did this account of nation-building fare under Zuma’s kleptocracy and a riven, unrepentant party that continues its bad habits unabated during the Ramaphosa regime? The question answers itself. Finally, the current Ramaphosa regime has performed so poorly that in mid-August 2020, Squagazzin and Naidoo wrote:

<sup>35</sup> I Chipkin & B Ngqulunga ‘Friends and Family: Social Cohesion in South Africa’ (2007) 34(1) *Journal of Southern African Studies* 310.

<sup>36</sup> I Chipkin ‘Social Cohesion as a Factor in Development’ Symposium for the Office of the President (11–12 June 2007) 3 (paper on file with author). However, as Jeffrey Sachs writes ‘High inequality undermines social cohesion, erodes public trust, and deepens political polarization, all of which negatively affect governments’ ability and readiness to respond to crises.’ J Sachs ‘How Inequality Fuels Covid-19 Deaths’ *Project Syndicate* (29 June 2020), accessed at [https://www.project-syndicate.org/commentary/inequality-fuels-covid19-mortality-by-jeffrey-d-sachs-2020-06?utm\\_source](https://www.project-syndicate.org/commentary/inequality-fuels-covid19-mortality-by-jeffrey-d-sachs-2020-06?utm_source).

<sup>37</sup> *Doctors for Life International v Speaker of the National Assembly* 2006 (6) SA 416 (CC), 2006 (12) BCLR 1399 (CC); *Matatiele Municipality & Others v President of South Africa & Others* 2007 (6) SA 477 (CC), 2007 (1) BCLR 47 (CC).

With debt surging and the coronavirus pandemic threatening the deepest economic contraction in almost 90 years, business leaders are warning that President Cyril Ramaphosa's government can no longer procrastinate. With the situation deteriorating rapidly, they say, South Africa faces a choice between loosening the grip of vested interests to embrace radical – and likely painful – reform, or risking a sovereign debt crisis and more permanent scars. 'We are looking at a wasteland,' said Martin Kingston, chairman of Rothschild & Co.'s South African unit and deputy president of Business Unity South Africa, the country's main business organization. 'The ramifications of not taking the necessary action in the near future are catastrophic.' The fact that government officials broadly agree with the prognosis underlines the seriousness of South Africa's plight. Yet addressing the challenge is far from straightforward, and will require a wholesale change in the African National Congress government's approach to marshaling the \$350 billion economy. Investors in South Africa are wearily familiar with policy inconsistency. The frustration of the renewables sector was a result of former President Jacob Zuma's decision to start pursuing an ultimately unsuccessful nuclear power deal with Russia from about 2014, *leaving purchase agreements with renewables companies unsigned. That ultimately brought a halt to what was one of the world's most successful clean-energy programs.* Telecommunications companies have waited over a decade for the sale of spectrum needed to expand their services and potential offshore oil resources lie untapped because the requisite laws haven't been passed. Labor unions have used their political power to block everything from education reform to the closure of heavily polluting coal-fired power plants ... All of this is bad news for Ramaphosa, who came to power promising to revive the economy ... 'South Africa is not a nation that's short of plans. Its problem lies in finding the political will to overcome powerful vested interests and implement them', according to Thabi Leoka, an independent economist in Johannesburg.<sup>38</sup>

In another searing (cotemporaneous) critique of the Zuma and Ramaphosa years, ANC struggle stalwart, long-term political prisoner, and South African Communist Party leader, Raymond Suttner wrote, that:

The ANC and President Cyril Ramaphosa personally are taking an unprecedented level of criticism at the moment. Many are finding it shocking that the organisation's response to widespread criticism, and its supposedly zero tolerance of corruption, is publicly voiced by one of its most tainted office bearers, Secretary-General Ace Magashule ... That someone who has been fingered in so many ways holds the key ANC office of Secretary-General and remains without any charges against him makes many uncomfortable and feeds into widespread cynicism about the ANC and an ANC-led government's level of involvement in a range of irregularities, especially alleged or proven tender corruption ... Magashule has been allowed to populate ANC HQ with Jacob Zuma loyalists and while he is often in contradiction with what Ramaphosa says, it is a one-sided battle. Ramaphosa and his allies have not been willing to fight to control the ANC. How, one must ask, can one lead the country, if one does not control one's own organisation? ... The current looting raises questions about the ANC's present, past and future ... The ANC was not always the seedy, decadent organisation we now see. It was ... also the organisation of people like Walter Sisulu and other famous liberation fighters, who were both wise and compassionate ... [T]here is no doubt that the ANC did enjoy a special place in the hearts of very many people in South Africa, that it has now lost a special presence among the South African people ... [W]here, [however], the public develops

<sup>38</sup> A Sguazzin & P Naidoo 'South Africa Nears the Point of No Return: The Continent's Dominant Powerhouse is being Pushed to the Edge of Economic and Political Disaster' *Bloomberg News* (12 August 2020), accessed at <https://www.bloomberg.com/news/articles/2020-08-12/south-africa-is-being-pushed-to-the-edge-of-economic-and-political-disaster>. (Emphasis added)

a sense of cynicism towards official politics, the outcome is not easy to predict. My sense is that the ANC may not be able to hold onto its previous support base and will gradually disintegrate or continue to exist, but as a political organisation devoid of political content ... It will be without the ideas and vision that drew people in earlier times, certainly without an emancipatory vision. *Corruption, unaccountable acts of violence, notably by security forces, and indifference to the poor and marginalised have become intrinsic parts of the ANC and government at every level ...* In these moments of political disillusionment, there is an apparent opening for popular movements. [B]ut in South Africa today, there are only relatively small ones, like the shack dwellers movement Abahlali baseMjondolo, with mainly regional support and a scattering of sectoral ones like Equal Education ... Though the[y] are often impressive, they are not able to make a dent on the national political scene.<sup>39</sup>

Suttner's article speaks directly to the relationship between political intractability and the limited stores of social capital in South Africa. Firstly, in so far as he can offer any political alternatives to the ANC, the only social democratic or radical democratic actors on the stage are CSOs with rather narrow legal/social movement agendas. In short, no plausible contestants, possessed of a large base with a reasonably coherent political agenda, exist. Secondly, that such narrow and rather tiny CSOs are the only possible standard bearers for what had once been a widely shared belief set speaks volumes to the thinness of South African civil society. Suttner now finds himself writing for the remnants of the left: a virtual space where: (a) (almost) everyone, in a very narrow, elite band of readers, seems to know (almost) everyone else; and (b) (almost) everyone works for the common good, but do not do so 'collectively'. As a consequence of (b) above, this virtual bridging network across professions, business, NGOs and academia have simply not produced bonding networks of sufficient breadth and depth to bring about meaningful change. To put the problem more bluntly, too many members of the intelligentsia are still fighting the last war, because that is where they feel most comfortable and, to be fair, the ultimate settlement of that war did not deliver the goods. But peace settlements – even in the form of fancy Constitutions – never deliver the goods. People and politics do. That this narrow band at the top don't see sufficient common cause to tackle, collectively, the major problems engaged in this book is what should give Suttner's readers pause. The social capital necessary to build inclusive political and economic institutions does not exist. Thus, if you want to know why we must *settle* for 'doing the best we can', Raymond Suttner has offered the most eloquent set of rationales.

### C. 'Doing the Best We Can' – Plausible, Small-Win Solutions to Problems Associated with Permanent Technological Unemployment

This section thus offers a number of *plausible* responses to the problem of permanent technological unemployment – without assuming that the problem can be resolved entirely. It suggests how the various three kinds of brakes on effective collective action adumbrated in Chapter II, and in the section above, can be overcome when the proper incentives for more inclusive political and economic institutions are put in place. However,

<sup>39</sup> R Suttner 'The ANC, Cyril Ramaphosa and SA: How Do We Emerge from the Current Crisis?' *Polity* (11 August 2020), accessed at <https://polity.co.za>. (Emphasis added). See also M Merten 'Recipe for Broken Governance: Incompetence, Covid-19 Tenders and Lockdown Narratives of War' *Daily Maverick* (13 August 2020), accessed at <https://www.dailymaverick.co.za/article/2020-08-13-recipe-for-broken-governance-incompetence-covid-19-tenders-and-lockdown-narratives-of-war/>.

to successfully overcome ‘wicked problems’, these reinvigorated domestic political and economic institutions must be married to regional and global institutions. While the prospects for such institutions at this particular ‘critical juncture’ may look rather bleak – because they are – South Africans remain in a position to make some of their own luck.

### *On method*

A word on this book’s approach to these complicated matters. Developed and developing nations alike have only just begun to have discussions about the primary wicked problems addressed herein.<sup>40</sup> Where they occur, they do so at the margins. A long post-2009 economic expansion, along with an embrace of ‘easy’ populist politics that have a visceral appeal to large portions of the population that have long been left behind, has blunted an honest appraisal of what needs to be done in all 70 or so democracies – be they high income, middle income or low income. Here then, are some solutions proffered in those quarters that recognise the wicked nature of permanent technological unemployment.<sup>41</sup>

### *The domestic realm: Creating inclusive and pluralistic institutions*

#### *Inequality and taxes*

Analysis of the growing disparity of wealth from the 1980s onwards tends to concentrate on wealth taxes, and more progressive taxation. Despite well-received probes by progressive economists such as Joseph Stiglitz on the need for restructuring of the polity,<sup>42</sup> the rise of

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<sup>40</sup> The other three wicked problems discussed at length – pandemics, climate change and nuclear proliferation – have generated discussion but no *fully* coordinated programme to expedite progress.

<sup>41</sup> Recognition may be a loose use of the term. Andrew Yang, a participant in the Democratic Presidential Primaries in 2020, made basic income grants (BIGs) a primary plank of his platform. Although he lasted longer than many expected, he dropped out after the first official primary in Iowa in February 2020. Despite their first-hand experience with problems associated with permanent technological unemployment, moderate Iowans demonstrated a profound resistance to the notion that a BIG might ameliorate some of their economic woes. Other polities have shown themselves to be alive to the dangers of artificial intelligence. In February 2020, the European Parliament issued the following warning:

AI is increasingly involved in algorithmic decision systems. In many situations, the impact of the decision on people can be significant, such as access to credit, employment, medical treatment, or judicial sentences. Automated decision-making can therefore perpetuate social divides. For example, some hiring algorithms have been found to be biased against women.

*European Parliament* ‘Artificial Intelligence: Tackling the Risks for Consumers’ (20 February 2020).

<sup>42</sup> J Stiglitz ‘Market Concentration is Threatening the US Economy’ *Project Syndicate* (11 March 2019). While J Stiglitz contends that the IMF and other international institutions long acted against the interests of developing countries, he argues, without contradiction, that tooth and claw capitalism can be tamed. J Stiglitz ‘Progressive Capitalism is Not an Oxymoron’ *The New York Times* (19 April 2019):

Behind the free market ideology there is a model ... which argues that market forces – the profit motive – drive the economy to efficient outcomes as if by an invisible hand. One of the great achievements of modern economics is to show the sense in which, and the conditions under which, Smith’s conclusion is correct. It turns out that these conditions are highly restrictive. Indeed, more recent advances in economic theory ... have shown that whenever information is imperfect and markets incomplete, which is to say always, and especially in developing countries, then the invisible hand works most imperfectly. Significantly, there are desirable government interventions which ... can improve upon the efficiency of the market. These restrictions on the conditions under which markets result in efficiency are important many of the key activities of government can be understood as responses ... market failures.

fear-based nativist populism and the rejection of multilateralism has only accelerated the disparity between the haves and the have nots.<sup>43</sup>

South Africa is often described as a middle-income country. But that's not how it looks. Reports by Oxfam and the World Bank in 2018 show that the wealthiest 10% of South Africa's population own more than 90% of its total wealth.<sup>44</sup> Upwards of 80% possessed almost no wealth at all. Thus, Banerjee and Duflo contended, prior to the pandemic in 2020, that the provision of micro-finance to start new or expand existing businesses might hold out some promise. (Of course, they assume that viable political institutions exist both to distribute funds equitably and to assist SMEs in creating sustainable business plans. Of course, they also assume that the money exists for the roll-out of such programmes.) This radically optimistic Keynesianism will not create a vibrant middle class, but it may keep some boats afloat throughout the COVID-19 pandemic, and beyond. Whether these Nobel Laureates – awards garnered for their work in behavioural economics for the poor – still believe that this path to development will work is explored later on in the chapter.

Funds for meaningful growth – or mere survival during the COVID-19 pandemic – will have to come from new sources. According to Stellenbosch Professor Ingrid Woolard:

The process of creating a net wealth tax in South Africa should ideally begin with a simple form of an annual net wealth tax. We would suggest that the net wealth tax rate should initially be at a low rate (possibly even zero). This [initial] assessment of who owns [what through mandatory] wealth disclosure ... will create an environment of transparency and over time will provide a much clearer picture of the net wealth tax base in South Africa. It would also allow further analysis to help set an effective wealth tax rate that does not promote tax migration and capital flight ... In turn, this data would [enable] the South African Revenue Service ... to test whether high net worth individuals are being taxed correctly within the income tax system.<sup>45</sup>

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By 2012, the World Bank had adopted Amartya Sen's development theory to analyse political economic and problems. 'South Africa Economic Update: Focus on Inequality of Opportunity' *World Bank* (2012), accessed at <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/233241468164377382/south-africa-economic-update-focus-on-inequality-of-opportunity>. By 2018, the World Bank had moved beyond development-based assessment to identifying the means to overcome poverty through education, tax incentives, minimum wage increases, public-private partnerships and other strong interventionist measures. Keynes seemed to have beaten back Friedman. *Overcoming Poverty and Inequality in South Africa: An Assessment of Drivers, Constraints and Opportunities* World Bank (March 2018), accessed at <http://documents1.worldbank.org/curated/en/530481521735906534/pdf/124521-REV-OUO-South-Africa-Poverty-and-Inequality-Assessment-Report-2018-FINAL-WEB.pdf>. As for the IMF, it recently found itself strongly defending Argentina from bond holders interested in calling in their debt and thereby protecting an Argentinean economy battered by the pandemic and a large portion of the populace from into poverty. P Goodman & D Politi 'In Argentina's Debt Negotiations, a Kinder, Gentler Capitalism Faces a Test' *The New York Times* (1 August 2020), accessed at <https://www.nytimes.com/2020/07/31/business/argentina-debt.html?action>

<sup>43</sup> J Frydenberg, H Keat, S M Indrawati & B Morneau 'There Is No Alternative to Multilateralism' *Project Syndicate* (20 September 2019), accessed at <https://www.project-syndicate.org/commentary/no-alternative-to-multilateralism-by-josh-frydenberg-et-al-2019-09>.

<sup>44</sup> *Overcoming Poverty and Inequality in South Africa: An Assessment of Drivers, Constraints and Opportunities* World Bank (March 2018), accessed at <http://documents1.worldbank.org/curated/en/530481521735906534/pdf/124521-REV-OUO-South-Africa-Poverty-and-Inequality-Assessment-Report-2018-FINAL-WEB.pdf>.

<sup>45</sup> I Woolard 'Economists Think South Africa's Persistent Inequality Should Be Tackled with a Wealth Tax' *Quartz Africa* (2 May 2019).

Property and financial assets reflect the easiest measures of wealth – that is, the easiest to identify. Annuities and retirement funds are quite low in South Africa, even amongst the existing middle class, and leave little room for a safe retirement. Given the extreme downward pressure on middle-class employment, the Stellenbosch economists suggest that annuities and retirement funds be excluded from any new tax plan.<sup>46</sup>

Colin Coleman has offered his own set of tax recommendations designed to produce greater equality, if not an entirely new social contract. In the following table, he identifies the revenue sources that might support a Basic Income Grant (BIG) or a Basic Income Scheme (BIS).<sup>47</sup>

Coleman’s relatively modest revenue plan has much to recommend it.<sup>48</sup> Moreover, instead of merely feeding a fiscus that has been repeatedly plundered, Coleman’s plan possesses the virtue of tying his tax plan to a BIG or a BIS. As we shall see, while BIGs and BISs have created some excitement around the globe, they have an extremely limited track record of success. (Some governments will be able to afford them, whilst other governments shall not.)

According to Stiglitz, the answers to growing inequality and the need to share a shrinking pie more equitably can be found within relatively recent history.<sup>49</sup> First, he notes that standards of living in the US and around the world began to grow in the late 18th century for two primary reasons. The scientific revolution led to increases in productivity and longevity. Political changes – from expansion of the franchise, to laws designed to place checks on the accumulation of power and wealth, to a commitment to vertical and horizontal constructions of the rule of law – facilitated the creation of more complex, efficient, fair and inclusive social and economic institutions.

Given that the law creates, regulates and distorts markets, what can be done about the distortions in this second gilded age? Here’s Stiglitz’s prescription:

[We begin] by recognizing the vital role the state plays in making markets serve society. We need regulations that ensure strong competition without abusive exploitation, realigning the relationship between corporations and the workers they employ and the customers that they are supposed to serve. We must be as resolute in combating corporate power as the corporate sector is in increasing it ... Markets on their own won’t provide insurance against the most important risks we face, such as unemployment and disability. They won’t provide pensions with low administrative costs ... or adequate infrastructure or a decent education for everyone or engage in sufficient basic research. Progressive capitalism is based on a *new social contract*

<sup>46</sup> S Soudien, V Reddy & I Woolard *The State of the Nation: Poverty & Inequality: Diagnosis, Prognosis and Responses* (2019).

<sup>47</sup> C Coleman ‘Making South Africa Whole’ *Project Syndicate* (4 September 2020), accessed at [https://www.project-syndicate.org/onpoint/south-africa-economic-growth-plan-by-colin-coleman-2020-08?utm\\_](https://www.project-syndicate.org/onpoint/south-africa-economic-growth-plan-by-colin-coleman-2020-08?utm_). See also ‘Final Report’ Davis Tax Committee (2018), <https://www.taxcom.org.za/>. Although slightly dated as a result of COVID-19, the Davis Tax Committee concentration on compliance and evasion would go some distance toward making South Africa a more inclusive society.

<sup>48</sup> *ibid.* Of course, one minor cavil turns on its modesty, and its reliance on multiple, novel sources of revenue to make it work. Given what we know of the South African state, how reasonable is it imagine that we can expect to claw back R14.2 billion in irregular or wasteful expenditure?

<sup>49</sup> Recall that in April of 2020, the Finance Minister Tito Mboweni expected a shortfall of R285 billion in the fiscus for 2021 as result of the contraction in the economy due to COVID-19.

## HOW ONE MIGHT GENERATE INCOME FOR A BASIC INCOME SCHEME

TAX REVENUE / EXPENDITURE SAVINGS ITEMS (Normalised year)	SAVINGS '20/'21 (ZAR billion)
Eliminate medical aid tax credit for R300 000 per annum income, or more	R12.5
Increase dividend withholding tax to 25%, from 20%	R5.0
Cap interest deductions for corporates at 25% nett debt / EBITDA and remove carry forward allowances	R10.0
Replace estate duty with progressive inheritance tax	R5.0
Remove retirement fund deduction for R600 000 per annum income, or more	R27.0
Increase 'sin' taxes (alcohol, tobacco) by 20% from R55.5 billion in '19 /'20	R11.0
Increase carbon tax to one quarter of EU standard	R2.0
Eliminate bracket creep relief	R10.0
Re-engineer VAT system credits / tiering, and upward adjust old age and child support grants to ensure nett gain for low-income households	R18.6
Interest saving on R325 billion of Eskom government guaranteed debt by moving it from Eskom directly onto government balance sheet	R3.5
Reduce cabinet size, departmental duplication, expenditures on conferences, travel, and overall Government saving of 5% on R70 billion spent on 'general public services', per Budget 2020	R3.5
Introduce 5% withholding tax on state procurement contracts, creditable against tax payable (5% on R334 billion last year's value of contracts)	R16.7
Introducing a license fee of R5 000 per annum, initially targeting top 10% of the 1.8 million informal SMMEs not registered for tax, fee payable at end of their third year's operation onwards	R1.0
Reduce departmental allocations or clawed back irregular/wasteful expenditure, last reported by the Auditor General for '18/'19 to be R94.6 billion by a target of 15%	R14.2
<b>TOTAL</b>	<b>R110</b>

between voters and elected officials, between workers and corporations, between rich and poor, and between those with jobs and those who are unemployed or underemployed.<sup>50</sup>

The need for a new social contract has been forcefully articulated by the Constitutional Court. In *Port Elizabeth Municipality v Various Occupiers*, the Court wrote:

It is not only the *dignity* of the poor that is assailed when homeless people are driven from pillar to post in a desperate quest for a place where they and their families can rest their heads. Our society *as a whole* is demeaned when state action intensifies rather than mitigates their marginalisation.<sup>51</sup>

Similarly, the Court in *Khosa* held that the Final Constitution commits us to an understanding of dignity in which 'wealthier members of the community view the minimal well-being of the poor as connected with their personal well-being and the well-being of the community as a whole.'<sup>52</sup> The Court's depiction of dignity correctly portrays this norm as a collective (and not merely an individual) good. It is this collective good toward

<sup>50</sup> Stiglitz (11 March 2019). (Emphasis added)

<sup>51</sup> 2005 (1) SA 217 (CC), 2004 (12) BCLR 1268 (CC). (Emphasis added)

<sup>52</sup> *Khosa & Others v Minister of Social Development & Others; Mahlaule & Others v Minister of Social Development & Others* 2004 (6) SA 505 (CC), 2004 (6) BCLR 569 (CC) at para 74. See also *Juma Masjid Primary School & Others v Ahmed Asruff Essay NO & Others* [2011] ZACC 13, 2011 (8) BCLR 761 (CC).

which new forms of taxation and a new social contract must be directed. Various states have managed to create ‘happy’ societies predicated upon dignity and a similar basket of material and immaterial public goods for all citizens.<sup>53</sup>

*‘Third ways’ to rethink the social contract: Universal basic income, basic income grants and basic income schemes*

Again, what’s clearly missing from the two dominant schools of thought in South African public law scholarship is any real appreciation for the current shape of our political economy and the immediate threat it poses to South Africa’s aspirational, social democratic project. There may, however, be a third way. The goal of this book as it draws to a close, is twofold: (a) to suggest possible avenues for addressing the danger that permanent technological unemployment poses for South Africa and (b) not to pull any punches on what the outcome is likely to be unless some form of radical but constructive change occurs.<sup>54</sup>

Innovation, forward-thinking, left-wing politics and solidarity may have been Hawaii’s four biggest contributions to politics in the United States in 2017. Hawaii earned this distinction by being the first state to formally accept the provisions of the Paris Climate Agreement after President Donald Trump decided to withdraw the US from the accord. In addition, Hawaii has embraced, tentatively, yet another innovative idea: universal basic income (UBI).

Hawaii’s bill has two major provisions. First, it declares that all families in Hawaii are entitled to basic financial security. The second provision establishes a number of government offices ‘to analyse our state’s economy and find ways to ensure all families have basic financial security, including an evaluation of different forms of a full or partial universal basic income.’ However, the benefits of such a programme have become more appealing in light of recent technological advances, specifically, the adoption of automated systems that could result in widespread unemployment. As we noted earlier, proponents of UBI have highlighted how it would be an improvement on existing social welfare programmes while mitigating the effects of the joblessness expected to follow automation. Critics of UBI contend that it would encourage a laxer attitude about work and argue that funding such a system would be difficult, if not impossible.

<sup>53</sup> According to the UN’s *Sustainable Development Solutions Report* or J Helliwell, R Layard & J Sachs (eds) *The World Happiness Report* (2019), accessed at <https://s3.amazonaws.com/happiness-report/2019/WHR19.pdf>, the top 20 nations in terms of the dual desiderata of dignity and happiness are: 1. Finland (7.769) 2. Denmark (7.600) 3. Norway (7.554) 4. Iceland (7.494) 5. Netherlands (7.488) 6. Switzerland (7.480) 7. Sweden (7.343) 8. New Zealand (7.307) 9. Canada (7.278) 10. Austria (7.246) 11. Australia (7.228) 12. Costa Rica (7.167) 13. Israel (7.139) 14. Luxembourg (7.090) 15. United Kingdom (7.054) 16. Ireland (7.021) 17. Germany (6.985) 18. Belgium (6.923) 19. United States (6.892) 20. Czech Republic (6.852). South Africa clocked in at a miserable 106.

<sup>54</sup> In other words, what’s missing from predominantly rights-based accounts is that they imagine that the Constitution is self-actualising and forget that the Constitution’s break with the past turns on its delivery of popular sovereignty to the people. The Constitution neither delivers emancipation nor does it hinder emancipation. Far too little attention has been paid to politics – both the hurly-burly of political contestation, the mundane nature of political statecraft and the creation of the institutions necessary to deliver those public goods required for any individual or group to pursue their own comprehensive vision of the good.

Although Hawaii's initial efforts paint a rosy picture of the future, Hawaii may be uniquely situated to undertake such an initiative. Its population is relatively small and fairly homogeneous. That makes securing the collective action required far less difficult. Its economy – grounded in tourism – previously made it far more immune to the deleterious effects of automation. Unfortunately, the concatenation of wicked problems that currently beset us meant that by mid-2020, Hawaii's primary economic drivers had been decimated by COVID-19. (As I warned at the outset of this book: we can no longer discount the possibility of potential future catastrophes.) For now, their UBI is on hold.

Other countries have experimented with UBIs. Some initial results suggest grounds for caution. In 2018, small and rather homogeneous Finland called an abrupt halt to experiments with UBI.<sup>55</sup> KELA, the Finnish social security agency, failed to secure the funding it needed to extend its universal basic income experiment beyond that year. As Bershidsky notes:

Before the experiment was approved by the government in 2016, KELA officials talked of paying 800 euros (\$974) a month in unconditional income to a test group of working-age citizens. But by the time the program began early last year, the amount was whittled down to 560 euros: If extended to the whole country, the cost of the earlier proposal would have exceeded the Finnish government's entire revenue.<sup>56</sup> [Moreover], it's all but impossible to live on 560 euros in Finland. A one-bedroom apartment on the outskirts of Helsinki rents for almost that much. So the experiment's designers settled on not really paying the UBI to the unemployed, who kept a higher level of government support – at least 32.4 euros a day for the first 400 days after losing a job. Only the working poor would benefit significantly from it. That limitation was designed to address two problems. Finland has a low employment rate for a rich country: just 71 percent of the working-age population, compared with 77 percent in neighboring Sweden and almost 86 percent in Iceland. So the idea was to provide an incentive for the unemployed to step into the job market, even if it meant taking on part-time or badly paid work. The other goal was to simplify Finland's complex system of housing, child-care and other benefits by replacing them with the lump sum payment.<sup>57</sup>

Canada's province of Ontario halted its BIG experiment when a conservative government put an end to it.<sup>58</sup>

Yet the promise of a UBI is far from dead.

What might be most surprising is that the greatest success appears to have occurred at a municipal level. The mayor of Stockton, California, began providing 125 of the city's

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<sup>55</sup> L. Bershidsky 'Finland's Basic Income Test Wasn't Ambitious Enough: The Payments Encouraged Beneficiaries to Take Work that Doesn't Pay a Living Wage' *Bloomberg News* (26 April 2018).

<sup>56</sup> *ibid.*

<sup>57</sup> *ibid.* Bershidsky continues:

Finland undertook its experiment for the wrong reasons. Using the universal basic income to increase labour market participation and phase out some benefits is like swatting flies with a sledgehammer. In a report on the future of work released earlier this month, the World Bank recommended the much more ambitious goal of considering UBI as a means of ensuring a 'societal minimum' of welfare in a world of increasingly precarious employment and growing automation. If a society is to accept much higher taxes to pay for a basic income plan, it has to be for a revolutionary outcome, not a mere bump in employment numbers and a dent in the cost of social security administration.

<sup>58</sup> 'Ontario's New Conservative Government to End Basic Income Experiment' *The Guardian* (1 August 2018), accessed at <https://www.theguardian.com/world/2018/aug/01/ontarios-new-conservative-government-to-end-basic-income-experiment>.

poorest residents with \$500 per month – with no stipulation as to how the money could be spent. The results of Michael Tubbs’ experiment:

- Recipients of the monthly stipends primarily used the money to buy groceries and pay their bills.
- Many said it had improved their quality of life.<sup>59</sup>

Consistent with tenets of experimental governance propounded by this author and others, the success of the Stockton trial has inspired other cities to follow suit. Saint Paul, Minnesota voted to approve funding for a programme to begin in September 2020 that would provide 150 low-income families \$500 a month for up to 18 months – no strings attached.<sup>60</sup> The absence of conditions would appear to be part of the reason for Stockton’s success. It doesn’t force low-income families to choose between existing social welfare benefits and/or their jobs, and the basic income grant. (Only 2% of Stockton residents are unemployed.) Oakland, California and 10 other cities – under the ‘Mayors for Guaranteed Income Initiative’ – are following suit. Many of the mayors participating in the initiative have been motivated by the degree to which the COVID-19 pandemic has left poor, urban dwellers – already on the margin – in a daily fight to survive.<sup>61</sup>

While Scotland, the state of California and the city of Barcelona have all previously proposed some form of UBIs/BIGs,<sup>62</sup> COVID-19 has increased interest and buy-in – at least experimentally. Spain approved something closer to a BIS in May 2020.<sup>63</sup> It did so in the midst of its battle with the COVID-19 pandemic and an economy expected to contract by at least 12% to 15% during 2020. Spain’s ‘Living Wage Grant’ (LWG) or ‘Living Minimum Wage’ provided low-income households with between 462 euros and 1 015 euros per month. The amount is contingent upon the number of family members. Importantly, the LWG does not require the recipient to be unemployed. LWGs thereby avoiding the creation of a disincentive to find and to maintain employment: ‘The subsidy is

<sup>59</sup> A Bendix ‘A 29-Year-Old Mayor Is Giving Some of His City’s Poorest Residents \$500 A Month. Here’s How He Thinks Basic Income Could Work for the Entire US’ *Business Insider* (19 December 2019), accessed at <https://www.businessinsider.com/basic-income-stockton-could-it-work-nationally-2019-12>: In particular,

... [e]arly data from the trial shows that the basic-income recipients have so far spent about 40% of their stipends on food and another 24% on sales and merchandise, like trips to Walmart or dollar stores. Another 11% went to paying their utilities, and about 9% went to buying gas and repairing their cars.

<sup>60</sup> A Bendix ‘Saint Paul, Minnesota, Will Give Some Residents \$500 Per Month for the Next Year and a Half in a Seminal Basic-Income Pilot’ *Business Insider* (18 September 2020), accessed at <https://www.msn.com/en-us/money/markets/saint-paul-minnesota-will-give-some-residents-24500-per-month-for-the-next-year-and-a-half-in-a-seminal-basic-income-pilot/ar-BB199wnU>.

<sup>61</sup> A Lakano ‘Mayor Schaaf Launching Universal Basic Income Pilot Program to Help Low-Income Oakland Residents’ *CBS SF Bay Area News* (1 July 2020), accessed at <https://sanfrancisco.cbslocal.com/2020/07/01/mayor-schaaf-launching-universal-basic-income-pilot-program-to-help-low-income-oakland-residents/>.

<sup>62</sup> On Scotland’s proposed programme, see <https://basicincome.scot/whats-happening-scotland/>; On California’s proposed programme, see <https://basicincome.org/news/2018/08/stockton-ca-us-new-details-revealed-in-planned-basic-income-demonstration/>, and on Barcelona’s attempt, see <https://www.theguardian.com/cities/2018/jun/27/benefit-or-burden-the-cities-trying-out-universal-basic-income>.

<sup>63</sup> J Neumann ‘Spain to Pay Living Wage That May Cost \$3.3 Billion a Year’ *Bloomberg News* (29 May 2020), accessed at <https://www.bloomberg.com/news/articles/2020-05-29/spain-to-pay-living-wage-that-may-cost-3-3-billion-a-year>.

expected to reach 850,000 households – an estimated 2.3 million people in Spain [roughly 6% of the population] – and cost the government 3 billion euros (\$3.3 billion) annually.<sup>64</sup> It's a development of which other inclusive (or partially inclusive) democracies should take note.<sup>65</sup>

The BIG, or at least a BIS, is not just a redistributive luxury for the developed world. According to Molina, Cortiz-Juarez and the United Nations Development Programme, in order to prevent up to 707 to 787 million people in Sub-Saharan Africa and South East Asia, 378 to 521 million people in Europe and Central Asia, and 168 to 218 million in the Middle East to Northern Africa from falling back into extreme poverty as a result of the economic downturn precipitated by COVID-19, 132 developing countries ought to consider 'a Temporary Basic Income, a minimum guaranteed income above the poverty line.'<sup>66</sup> The TBIs – designed to protect developing countries less resilient to shocks – could range from:

[A]mounts between 0.27 and 0.63 per cent of the combined GDPs [of 132 developing countries considered], depending on the policy choice:

- i. top-ups on existing average incomes in each country up to a vulnerability threshold;
- ii. lump-sum transfers that are sensitive to cross-country differences in the median standard of living; or,
- iii. lump-sum transfers that are uniform regardless of the country where people live.<sup>67</sup>

South American countries (on the world's most unequal continent and one extremely hard hit by the first wave of COVID-19) have begun to reconsider the nature of social welfare and to some extent the social contract. While Brazil, for example, first passed legislation designed to support a 'Basic Income Scheme' in 2004, funds for the scheme went, without malintent, to increasing the size of other social welfare programmes. Bolivia created such a scheme for the elderly back in 1997. Ecuador has created a Basic Income Scheme on an emergency basis, while Chile is seriously considering doing so. However, it's Brazil's Basic Income Scheme that could be a game-changer.

Support for the Basic Income Scheme began in April 2020. Although President Jair Bolsonaro's COVID-19 denialist government initially opposed the concept, he changed his tune when he recognised the potential political benefits that would flow from its creation:

It currently benefits more than 50m people, a quarter of Brazil's population. Monthly cash worth \$110 is paid for three months, with the possibility of extension. Payments are distributed by a state bank, with eligibility criteria based on worker status and income.<sup>68</sup>

As a monthly amount, \$110 is certainly not insignificant. It far outstrips the status quo. Until recently, Brazil's *bosa familia* scheme covered 13 million families at \$20 per month.<sup>69</sup>

<sup>64</sup> *ibid.*

<sup>65</sup> Spain's cause was certainly helped by its socialist-led leftist coalition. Moreover, with unemployment at 20%, the new measure can be pitched as relief before it takes on the status of an accepted part of this social democracy's suite of welfare programmes.

<sup>66</sup> G Molina & E Ortiz-Juarez. *Temporary Basic Income: Protecting Poor and Vulnerable People in Developing Countries – United Nations Development Programme* (2020).

<sup>67</sup> *ibid.* at 1, 7–12.

<sup>68</sup> M de Boule 'A Basic Income Scheme for the Developing World' *The Financial Times* (18 May 2020), accessed at <https://www.ft.com/content/08eb9a10-98fa-11ea-871b-edeb99a20c6e>.

<sup>69</sup> E Supply 'Basic Income and Employment in Brazil' (2007) 2(1) *Basic Income Studies* 10, accessed at <https://doi.org/10.2202/1932-0183.1067>.

However, it failed to reach workers in the informal sector and the roughly 33% of the nation's population that lacked bank accounts. The new Basic Income Scheme eliminates those gaps.<sup>70</sup>

Of course, there's a catch. The *bosa familia* programme checked in annually at a mere 1% of GDP. The new BIS, if rolled out over a year, would amount to 8% of GDP. However, in classic Keynesian fashion, the increased consumption generated by the BIS should raise tax revenues so that the annual cost would actually drop to 5% of GDP.<sup>71</sup> The remainder could be covered by a tax on corporate dividends. Of course, Brazil must operate within the new normal limits of COVID-19 – and whatever diminution of the fiscus that arises. Moreover, good reason exists to mistrust Bolsonaro's authoritarian and extractive tendencies.

What about South Africa? The wealth and income gap leaves South Africa with the dubious distinction of having the world's highest Gini coefficient. In the abstract, finding ways to tap into the wealth of the wealthiest should increase the country's capacity to create a similar scheme.

Near the end of a pre-pandemic 2019 draft, I proffered the following 'We are Doing the Best We Can' proposal:

What the state can do – and hasn't done effectively – is provide grants for the unemployed excluded middle who fall between children's grants and grant payments for the elderly. It's not an especially large bill to carry and might have the benefit of eliminating (a) hunger and malnutrition; (b) create a multiplier effect in poor urban and peri-urban communities; (c) eliminate distortions in family organization that flow from only having children and the elderly as recipients of grants – such that other members of the family drawdown on these grants in manner that does not necessarily benefit the intended recipients; (d) allow women and children to escape crowded living spaces, and more to the point, enable them to escape the domestic violence and intimate partner violence endemic to South Africa (historically home to the largest rate of sexual violence for a country not at war or riven by civil war).<sup>72</sup>

After COVID-19 hit, one significant plank in the government's April 2020 stimulus/relief package took the following form:

All ... grant beneficiaries will receive an extra R250 per month for the next six months. In addition, a *special Covid-19 Social Relief of Distress grant of R350 a month* for the next 6 months will be paid to individuals who are currently unemployed and do not receive any other form of social grant or UIF payment.<sup>73</sup>

<sup>70</sup> Only in Bolsonaro's bizarre world can COVID-19, pandemic denialism and a BIS coexist. Whether COVID-19 eliminates the state's capacity to pay for a BIS remains to be seen. The reversal of 20 years' worth of successful poverty initiatives throughout Latin America in less than six months must bracket any hope that surrounds such progressive social welfare schemes. J Turkewitz & S Villamil 'In Latin America, the Pandemic Threatens Equality like Never Before' *The New York Times* (11 July 2020), accessed at <https://www.nytimes.com/2020/07/11/world/americas/coronavirus-latin-america-inequality.html>.

<sup>71</sup> De Boule (18 May 2020).

<sup>72</sup> S Woolman & C Sprague 'Nowhere to Run, Nowhere to Hide: The Absence of Public Policy on Intimate Partner Violence Abrogates the Rights to Health and Bodily Integrity Under the South African Constitution' (2015) 22 *Cardozo Journal Of Law & Gender* 29, accessed at [https://www.researchgate.net/publication/292608218\\_Nowhere\\_to\\_Run\\_Nowhere\\_to\\_Hide\\_The\\_Absence\\_of\\_Public\\_Policy\\_on\\_Intimate\\_Partner\\_Violence\\_Abrogates\\_the\\_Rights\\_to\\_Health\\_and\\_Bodily\\_Integrity\\_Under\\_the\\_South\\_African\\_Constitution](https://www.researchgate.net/publication/292608218_Nowhere_to_Run_Nowhere_to_Hide_The_Absence_of_Public_Policy_on_Intimate_Partner_Violence_Abrogates_the_Rights_to_Health_and_Bodily_Integrity_Under_the_South_African_Constitution).

<sup>73</sup> 'Social Grants – Coronavirus-19' [www.gov.za/coronavirus/socialgrants](http://www.gov.za/coronavirus/socialgrants). (Emphasis added). Social Relief of

This ‘radically optimistic’ Keynesian grant ought to be the beginning of a more permanent scheme that’s taken far too long to come to fruition. Unfortunately, until the government – and such agencies as SASSA, DSD, and the UIF – prove that they can actually carry out their mandates, we face the shameful conditions of a county in which:

- Forty-seven percent of respondents reported that their household ran out of money to buy food in April 2020. Prior to the lockdown, 21% of households reported that they ran out of money to buy food in the previous year.<sup>74</sup>
- Job losses since April (the proportion of adults who earned an income ... declined by 33%) ... means ... that more South Africans are unemployed and without any income than those who are working.<sup>75</sup>

In addition, government stimulus and relief packages need to be carefully targeted so that the grants in question are actually spent and create a multiplier effect. The potential danger of the kind of firehose relief package rolled out by the South African government in April 2020, as Joseph Stiglitz and Hamad Rashid have pointed out, is that

[A] significant portion of the money is being funneled directly into capital buffers, leading to an increase in precautionary balances. The situation is akin to the ‘liquidity trap’ that so worried John Maynard Keynes during the Great Depression. [The] stimulus measures have understandably been rolled out in haste – almost in panic – to contain the economic fallout from the pandemic ... But it is now clear that the pandemic will last much longer than a few weeks, as was initially assumed when these emergency measures were enacted. That means these programs all need to be assessed more carefully, with an eye to the long term. During periods of deep uncertainty, precautionary savings typically rise as households and businesses hold on to cash for fear of what lies ahead. The current crisis is no exception. Much of the money that households and businesses receive in the form of [loans or grants could] ... sit idle in ... bank accounts, owing to anxieties about the future and a broader reduction in spending opportunities. At the same time, banks will likely have to sit on the excess liquidity, for lack of credit-worthy borrowers willing to take out fresh loans ... The key for now, then, is to reduce risk and increase incentives to spend ... Governments also should consider issuing spending vouchers to stimulate household consumption ... Such digital coupons ... can be used to buy various goods and services within a certain timeframe. The expiration date makes them potent stimulants of consumption and aggregate demand in the short term – when it is needed most.<sup>76</sup>

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Distress Grants qualifications are as follows:

Applicants must be:

- Above the age of 18;
- Unemployed;
- Not receiving any income;
- Not receiving any social grant;
- Not receiving any unemployment insurance benefit and does not qualify to receive unemployment insurance benefits;
- Not receiving a stipend from the National Student Financial Aid Scheme; and
- Not resident in a government funded or subsidised institution.

<sup>74</sup> F Haffajee ‘The Day the Bottom Fell out of South Africa – A Triple Pandemic Has Hit Us’ *Daily Maverick* (15 July 2020), accessed at <https://www.dailymaverick.co.za/article/2020-07-15-the-day-the-bottom-fell-out-of-south-africa-a-triple-pandemic-has-hit-us/>.

<sup>75</sup> *ibid.*

<sup>76</sup> J Stiglitz & H Rashid ‘Which Economic Stimulus Works?’ *Project Syndicate* (8 June 2020), accessed at <https://www.project-syndicate.org/commentary/>

We've already seen that a substantial amount of money set aside for SMME loans went untouched for fear of the inability to meet the conditions attached for repayment. The difficulties in rolling out the new unemployment relief grants – because they are short-lived (six months) – might lead to the kind of 'the precautionary savings' Stiglitz identified above. If increased consumption does not occur, then the state will not recoup at least part of its relief spending through tax revenues. Perhaps the high levels of hunger and the large number of people eking out an existence at the food poverty line should limit our immediate concern about liquidity traps at the bottom of the pyramid during the truly desperate days of this pandemic. However, should we wish to turn a stopgap measure into a long-term commitment, which ensures that all South Africans possess an entitlement to some form of basic income, then spending vouchers *with expiration dates* might not be such a bad idea. It's impossible to know, without first seeing the results of this experiment, whether Stiglitz and Rashid's worries are warranted – or whether South African beneficiaries of a basic income grant will behave in a manner consistent with the residents of Stockton, California.

Of course, either outcome is contingent upon the actual receipt of the R350 (COVID-19) Social Relief of Distress (SRD) grants. As matters stood at the end of August 2020, the South African Social Security Agency's (SASSA) system for processing the applications for SRDs had 'a backlog of some 300 000 emails ... 1 000 new emails per day ... [and] 40 000 attempted phone calls.'<sup>77</sup> Only 26 persons had been assigned to the SASSA SRD Call Centre – and just over half (14) had the capacity to handle grant issues. SASSA had requested the creation of an outsourced (private) call centre to manage both the backlog and the surfeit of new requests before the SRD grant window closed at the end of October 2020. It would be easy to be churlish about the government's efforts in this regard. But the SRDs, while in place for only a limited period of time, accomplished their purpose. As Bhoorat and Kohler note:

As of mid-October, 18.5 million COVID-19 grants were distributed to 6 million unique individuals since May, resulting from more than 9 million applications. Given the eligibility criteria for the COVID-19 grant and a few assumptions pertaining to takeup, we estimate that the grant has the potential to reach up to 10 million individuals. Together, with the existing Child Support Grant that already reaches 13 million children and 8 million caregivers along

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stimulus-policies-must-benefit-real-economy-not-financial-speculation-by-joseph-e-stiglitz-and-hamid-rashid-2020-06. As William Janeway notes from a more sanguine perspective about our current political climate and the macroeconomic choices available to us:

[A]ll over the world, people are acting as if even this frightening global slide into authoritarianism might be reversed through the mechanisms John Maynard Keynes proposed three-quarters of a century ago ... These optimists may succeed, and they may fail. But they are pursuing a vision, a vision that sustained Keynes through three world crises and demonstrated beyond any doubt that a better world was possible on the other side. Keynesianism, in this purest, simplest form is not so much a school of economic *thought as a spirit of radical optimism.*

W Janeway 'The Master and the Prodigy' *Project Syndicate* (July 2020), accessed at [https://www.project-syndicate.org/onpoint/review-frank-ramsey-keynes-price-of-peace-by-william-h-janeway-2020-08?utm\\_source=Project+Syndicate+Newsletter&utm\\_](https://www.project-syndicate.org/onpoint/review-frank-ramsey-keynes-price-of-peace-by-william-h-janeway-2020-08?utm_source=Project+Syndicate+Newsletter&utm_). It should go with saying that many of Keynes's radically optimistic views – say on technological unemployment – proved to be dead wrong (even if his more modest, humane proposals actually work).

<sup>77</sup> 'The R350 Coronavirus Grant System Has a Pile of Unanswered Emails 300,000 Deep – On Top of 40,000 Calls Per Day' *Business Insider SA* (28 August 2020), accessed at <https://www.businessinsider.co.za/sassa-wants-help-with-covid-19-unemployment-grant-calls-and-emails-2020-8>.

with other grants reaching about 5 million recipients, President Ramaphosa's package has the potential to provide much-needed support to about 36 million people, or 61 percent of the South African population.<sup>78</sup>

Now that's a success story worth rehearsing.

If South Africa, along with SASSA, can turn itself around and weather the COVID-19 storm, then a Basic Income Scheme or Temporary Basic Income (that becomes a permanent feature of the budget) is rather easily aligned with ANC policy and might answer opportunistic critics within and without who have pressed for accelerated economic reforms. Whether the cause of extremely high levels unemployment is structural or is a function of permanent technological unemployment or both, meeting this immediate (and ongoing) existential threat to the social fabric of South African society constitutes a genuine necessity. Whether such a scheme constitutes what William Janeway recently called 'radically optimistic Keynesianism' – given our dysfunctional state – is pretty much neither here nor there.<sup>79</sup> Without such an intervention, as Colin Coleman notes, we are at a tipping point beyond which there may be no meaningful recovery for state, society and economy.<sup>80</sup>

Off with the gloves. As the public and private healthcare systems collapse around the country, President Ramaphosa remonstrated the public for causing the second wave and demanded that they wear masks or face jail or fines. Of course, it matters not that the masks the majority of South Africans would wear would increase the likelihood of infection – as I noted above. Like Donald Trump, Cyril Ramaphosa wants to play the strongman without offering any semblance of relief to the citizens of South Africa. The relief grants ran out in October 2020. What one would have hoped to have heard from the President was how in 2021, government would address increased food poverty as a result of COVID-19. But as Bhorat and Köhler noted in late November 2020, no further relief cheques would be forthcoming:

Any further stimulus packages are likely to prove fiscally unsustainable. The challenge now – for government and policymakers – shifts to finding instruments on both the revenue collection and expenditure sides to place the country onto a measured and optimal fiscal consolidation path.<sup>81</sup>

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<sup>78</sup> H Bhorat and T Köhler *Lockdown Economics in South Africa: Social Assistance and the Ramaphosa Stimulus Package* Brookings Institute (20 November 2020), accessed at <https://www.brookings.edu/blog/africa-in-focus/2020/11/20/lockdown-economics-in-south-africa-social-assistance-and-the-ramaphosa-stimulus-package/>.

<sup>79</sup> W Janeway 'The Master and the Prodigy' *Project Syndicate* (7 August 2020), accessed at [https://www.project-syndicate.org/onpoint/review-frank-ramsey-keynes-price-of-peace-by-william-h-janeway-2020-08?utm\\_source=Project+Syndicate+Newsletter&utm\\_](https://www.project-syndicate.org/onpoint/review-frank-ramsey-keynes-price-of-peace-by-william-h-janeway-2020-08?utm_source=Project+Syndicate+Newsletter&utm_)

<sup>80</sup> C Coleman 'Making South Africa Whole' *Project Syndicate* (4 September 2020), accessed at [https://www.project-syndicate.org/onpoint/south-africa-economic-growth-plan-by-colin-coleman-2020-08?utm\\_source](https://www.project-syndicate.org/onpoint/south-africa-economic-growth-plan-by-colin-coleman-2020-08?utm_source). Coleman's growth plan begins with a rather bleak caveat:

No society can survive with 50% unemployment, yet that is exactly what South Africa [is] facing ... Joblessness alone, exacerbated by the COVID-19 pandemic, has forced the country into a state of economic emergency.

<sup>81</sup> H Bhorat & T Köhler 'Lockdown Economics in South Africa: Social Assistance and the Ramaphosa Stimulus Package' *Brookings Institute* (20 November 2020), accessed at <https://www.brookings.edu/blog/africa-in-focus/2020/11/20/lockdown-economics-in-south-africa-social-assistance-and-the-ramaphosa-stimulus-package/>.

Instead of concentrating on masks that do not do their intended work, and blaming the citizenry for their plight, the President would have done well to explained how they would eat if the ongoing transmission of SARS-CoV-2 and the global pandemic continues to limit the country's economic recovery.

*Behavioural economics at the bottom of the pyramid*

Marrying behavioural economics to development theory makes perfect sense to me, a sometime radically optimistic Keynesian, since it was quite explicitly what I set out to do, and accomplished, in *The Selfless Constitution* seven years ago.<sup>82</sup> Abhijit Banerjee and Ester Duflo rightly deserve credit for turning the attention of a new generation of economists and social theorists to the fruitful outcomes that flow from connecting Amartya Sen's development theory and Richard Thaler's behavioural economics.<sup>83</sup>

In *Poor Economics*, Banerjee and Duflo reach five critical conclusions that are essential for turning the lives of the most marginalised and impoverished persons and communities around:

1. 'The poor often lack critical pieces of information and believe things that are not true.'
2. 'The poor bear too much responsibility for their own lives (for the wealthy, the right decisions are often automatic).'
3. 'There are good reasons that some markets are missing for the poor, or that they face unfavorable prices in them.'
4. 'Poor countries are not doomed to failure because they are poor, or because they have had an unfortunate history.'
5. 'Expectations about what people are able or unable to do all too often end up turning into self-fulfilling prophecies.'<sup>84</sup>

With respect to 1, a behavioural economist would set up systems that would nudge a poor business owner in the right direction, say, by assisting the businessperson in creating a business plan that filled a market gap or identifying a missing step in how the businessperson went about running the enterprise. With respect to 2, a development theorist would ensure that the poor person or community marginalised had access to banks and lines of credit, as well as bank accounts that promoted savings that enabled persons to actually delay immediate gratification and pursue increased and sustainable gratification over time. With respect to 3, Banerjee and Duflo write:

The poor pay very high interest rates, in part because determining the creditworthiness of the poor is time-consuming (and expensive), creditors have very limited options for recovering capital after default, and while interest rates are extremely high, net returns per account are still relatively low. It is also for these reasons that the poor rarely have access to banks and instead most often have to rely on money lenders, their community, or microcredit for a loan.<sup>85</sup>

Here the formal sector and banks require a nudge, along with state support (a clear marriage of behavioural economics and development theory), so that various markets for low-income communities can be created in every domain of their day-to-day lives, and that the gap between the formal and informal sectors of the economy might be closed over time. With

<sup>82</sup> S Woolman *The Selfless Constitution: Experimentalism and Flourishing as Foundations of South Africa's Basic Law* (2013), accessed at [www.selflessconstitution.co.za](http://www.selflessconstitution.co.za).

<sup>83</sup> A Banerjee & E Duflo *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty* (2011); A Banerjee & E Duflo *Good Economics for Hard Times* (2019).

<sup>84</sup> A Banerjee & E Duflo *Poor Economics* (2011) 269–271.

<sup>85</sup> *ibid.*

respect to 4, Acemoglu and Robinson have repeatedly made the very same point: numerous examples exist over the last 30 years of low-income nations able to prove that they were capable of turning themselves into middle-income or medium-to-high income nations with a more egalitarian spread of wealth. So much pivots on the policies that the state – along with existing social institutions – pursue. Here again is where South Africa – as Acemoglu and Robinson (and I) would contend – has performed inadequately and chosen policy paths that have kept the poor, poor. With respect to 5, a certain ugly arrogance attaches to those born into wealth or who are fortunate to stumble into it, that they either deserve it or worked hard for it (neither of which are true). That sense of entitlement leads those simply fortunate enough to be better off, as Arnaud Vaganay writes, to

not pay enough attention to what the poor say and do. Kenyan farmers know that if they use fertilizers their crop yields will be larger and more than cover the cost of the fertilizer, and yet they don't use fertilizer. Experiments show that simple steps – such as offering coupons right after the harvest season as opposed to shortly before the planting season – often make a difference in the life of the poor.<sup>86</sup>

Every behavioural economist or choice architect knows that short-term irrationality is part of human nature, and that the goal of policymakers in every sphere is to nudge people away from negative defaults toward positive heuristics.

The first significant mistake that Banerjee and Duflo make occurs in a chapter of *Good Economics for Hard Times* called 'Player Piano'. Surveying the service economy of the United States in 2019, with its historically low unemployment rate of 3.6%, they see no evidence of robots coming for anyone's job, let alone those of the upwardly mobile poor. Well, now the evidence is in, the robots have arrived. The jobs that the robots have already taken are those of the working poor, the working class and the middle class. What this class of behavioural economists have to say in a COVID-19 world in which up to 42% of jobs for the now unemployed may vanish remains to be seen.<sup>87</sup>

The first significant concession by Banerjee and Duflo occurred in December 2020, and constitutes a remarkable volte face in their thinking. In 'How Poverty Ends: The Many Paths to Progress – and Why They Might Not Continue', this powerful team of development economists conclude:

For all the worries today about the explosion of inequality in rich countries, the last few decades have been remarkably good for the world's poor. Between 1980 and 2016, the average income of the bottom 50 percent of earners nearly doubled, as this group captured 12 percent of the growth in global GDP. The number of those living on less than \$1.90 a day – the World Bank's threshold for 'extreme poverty' – has dropped by more than half since 1990, from nearly two billion to around 700 million. Never before in human history have so many people been lifted out of poverty so quickly ... There have also been massive improvements in quality of life, even for those who remain poor. Since 1990, the global maternal mortality rate has been cut in half. So has the infant mortality rate, saving the lives of more than 100 million children. Today, except in those places experiencing major social disruption, nearly all children, boys and girls alike, have access to primary education. Even deaths from HIV/AIDS,

<sup>86</sup> A Vaganay 'Review of Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty' *Politics and Policy* (4 September 2011), accessed at <https://blogs.lse.ac.uk/politicsandpolicy/book-review-poor-economics/>.

<sup>87</sup> The protests and riots across US cities after ongoing failures to treat African-Americans with the most rudimentary levels of dignity (that flow from their intrinsic worth) makes this issue far more than a hypothetical question.

an epidemic that once seemed hopeless, peaked soon after the turn of the millennium and have been declining ever since. A great deal of the credit for these gains can go to economic growth. There simply is no accepted recipe for how to make poor countries achieve permanent ... growth. Even the experts seem to have accepted this. In 2006, the World Bank asked the economist Michael Spence to lead a commission on economic growth. In its final report, the group recognized that there are no general principles for growth and that no two instances of economic expansion are quite alike. Easterly described their efforts in less charitable terms: 'After two years of work by the commission of 21 world leaders and experts, an 11-member working group, 300 academic experts, 12 workshops, 13 consultations, and a budget of \$4m, the experts' answer to the question of how to attain high growth was roughly: we do not know, but trust experts to figure it out.' [For example], regardless of the precise cause, India's economic rise is best understood as the result of correcting misallocation: the type of growth that can come from picking low-hanging fruit. That kind of growth cannot go on forever. As the economy sheds its worst plants and firms, the space for further improvement naturally shrinks. *Today, India seems to be facing the prospect of a steep deceleration.* The bottom line is that the true ingredients of persistent economic growth remain mysterious. But there is much that can be done to get rid of the most egregious sources of waste in poor countries' economies and of suffering among their people. Children who die of preventable diseases, schools where teachers do not show up, court systems that take forever to adjudicate cases – all no doubt undercut productivity and make life miserable. Fixes to such problems may not propel countries to permanently faster growth, but they could dramatically improve the welfare of their citizens.<sup>88</sup>

Given their place in the pantheon of development scholars, Banerjee and Duflo's words regarding limited growth may seem like something of a bitter pill for those who would want to grant everyone access to a working-class or middle-class existence. But that reading would miss the most relevant point for a COVID-19 South Africa in 2021. South Africa was a train-wreck before the pandemic. There's little sense in hoping that the little train that couldn't somehow be placed back on the tracks headed toward some place down the line where everything works and life is dramatically better for everyone. That train has left the station. For the moment, however, finding the resources to ensure that people remain at or above the food poverty line and minimising the pain that a pandemic-induced economic crisis has imposed on the majority of South Africans ought to be the government's goal. It's broke – a fact it should acknowledge as its first step. Thereafter, it should fix what can be fixed. With what it has. There's no new NDP around the corner. However, a commitment to eliminating suffering would be, as Banerjee and Duflo suggest, a good place to start.

*The last inclusive institution standing: The Constitutional Court and the rule of law*

If you look at the history of nations that maximized the virtues that we associate with democracy, you notice that what came first was constitutionality, rule of law, and the separation of powers. Democracy almost always came last. If by democracy we mean the right of all adults to take part in the choice of government that's going to rule over them, that came very late – in my lifetime in some countries that we now think of as great democracies, like Switzerland, and certainly in my father's lifetime for other European countries like France. So we should

<sup>88</sup> A Banerjee & E Duflo 'How Poverty Ends: The Many Paths to Progress – and Why They Might Not Continue' *Foreign Affairs* (3 December 2020), accessed at [https://www.foreignaffairs.com/articles/2019-12-03/how-poverty-ends?utm\\_](https://www.foreignaffairs.com/articles/2019-12-03/how-poverty-ends?utm_). (Emphasis added)

not tell ourselves that democracy is the starting point ... That's not an argument for going back to restricted suffrage or two classes of voters, or whatever it might be – you know, the informed or the uninformed. But it is an argument for understanding that democracy is not the solution to the problem of unfree societies.<sup>89</sup>

Our Constitutional Court has always displayed an admirable modesty in approach to its own role and with respect to the Constitution, of which, along with the people themselves, it shares guardianship. In 2004, the Constitutional Court wasn't quite yet challenged with the breakdown of social order on display across the Limpopo in Zimbabwe. However, it was quite aware of the fragility of political institutions that were less than a decade old, and that – more troubling still – remained untethered to the broad array of (as yet non-existent) social (as opposed to merely legal) practices and traditions that were necessary and essential foundations for this new order's stability.

In prior decisions, it had spoken of the rule of law as 'foundational to the stability of an orderly society. It ensures the peaceful, regulated and institutionalised mechanisms to resolve disputes, without resorting to self-help.'<sup>90</sup> It is one thing to inveigh against individualised acts of self-help. It is quite another to find the state culpable for the social disintegration that flows from a generalised failure of the state's legal dispute mechanisms to resolve conflict effectively.

However, the bold assertion in *Republic of South Africa & Another v Modderklip Boerdery (Pty) Ltd* is not that FC s 34 read with FC s 1's commitment to the rule of law simply secures for the citizenry those legal institutions required to mediate readily identifiable and circumscribed conflicts.<sup>91</sup> FC s 1(c) read with FC s 34 requires more than 'the mere provision of the mechanisms' for dispute resolution. (emphasis added).<sup>92</sup> The Court rather emphatically demands that the state take 'reasonable steps ... to ensure that large-scale disruptions in the social fabric do not occur in the wake of the execution of court orders, thus undermining the rule of law'.<sup>93</sup> If such language alone is not striking enough – and if we cannot say whether the spectre of a Zimbabwe-like constitutional crisis loomed large in the Court's collective imagination – then three subtle shifts in language hint at the Court's ultimate concerns. The access to courts is no longer primarily concerned with the existence of formal legal structures. It is now concerned with 'effective remedies'. Effective remedies turn our attention to *substantive* outcomes. Substantive outcomes are to be measured by the state's compliance with rather murky notions of the 'reasonable steps' required to turn back the forces of entropy. It also seems clear that this new reasonableness test is not derived from FC s 34. It flows from FC s 1(c) and our commitment to the rule of law. As Justice Langa writes: 'The precise nature of the state's obligation in any particular case and in respect of any particular right will depend on what is reasonable, regard being had to the nature of the right or interest that is at risk as well as on the circumstances of each

<sup>89</sup> T Judd 'On Intellectuals and Democracy' *New York Review of Books* (May 2012) 5, accessed at <https://www.nybooks.com/articles/2012/03/22/intellecutuals-and-democracy/>.

<sup>90</sup> *Chief Lesapo v North West Agricultural Bank and Another* 2000 (1) SA 409 (CC), 1999 (12) BCLR 1420 (CC) at para 22.

<sup>91</sup> *President of the Republic of South Africa & Another v Modderklip Boerdery (Pty) Ltd* 2005 (5) SA 3 (CC), 2005 (8) BCLR 786 (CC).

<sup>92</sup> *ibid.* at para 42.

<sup>93</sup> *ibid.* (Emphasis added)

case.<sup>94</sup> FC s 1(c) will tell us, in the context of various rights, what reasonable, *substantive* steps the state – and the courts – must take to maintain order. The challenges of meeting such a reasonableness requirement in similar kinds of cases, the Court made emphatically clear, were not to be underestimated.

Although the Court describes these circumstances as extraordinary, they are, in fact, the circumstances in which South Africans find themselves now. The *Modderklip* Court writes:

[C]ourt orders must be executed in a manner that prevents social upheaval. Otherwise the purpose of the rule of law would be subverted by the very execution process that ought to uphold it ... The circumstances of this case are extraordinary in that it is not possible to rely on mechanisms normally employed to execute eviction orders. This should have been obvious to the state. It was not a case of one or two or even ten evictions where a routine eviction order would have sufficed. To execute this particular court order and evict tens of thousands of people with nowhere to go would cause unimaginable *social chaos* and *misery* and *untold disruption*. In the circumstances of this case, it would also not be consistent with the rule of law. The question that needs to be answered is whether the state was, in the circumstances, obliged to do more than it has done to satisfy the requirements of the rule of law and fulfil the [FC s] ... 34 rights of *Modderklip*. I find that it was unreasonable of the state to stand by and do nothing in circumstances where it was impossible for *Modderklip* to evict the occupiers because of the sheer magnitude of the invasion and the particular circumstances of the occupiers.<sup>95</sup>

In the space of several paragraphs, the *Modderklip* Court has moved from an apparently procedural gloss on the rule of law – consistent with the legality principle enunciated in *Fedsure* and *Pharmaceutical Manufacturers* – to something far more robust. The state – in order to comply with the dictates of the rule of law doctrine – must create and maintain courts that provide ‘effective remedies’. Again, the rule of law requires not just any remedy, but an effective remedy.

What is an effective remedy? An effective remedy must reflect a serious attempt to prevent ‘large-scale disruptions in the social fabric’ and their attendant ‘chaos and misery’. Failure of the state to plan adequately for such contingencies, risks censure by the courts. Moreover, such censure is no longer limited to a terse statement at the end of a judgment castigating the responsible minister for a failure to discharge constitutional obligations. A failure to take those reasonable steps necessary to safeguard the rule of law may result in an award of *constitutional damages* against the state or, as the Minister of Social Development would find out a decade later, an award of costs against her to paid out of her own pocket. In South Africa, we are concerned, not with mere violations of freedom of contract – as was the US Supreme Court in *Lochner* – but with *state action* that risks ‘large-scale disruptions in the social fabric’.<sup>96</sup>

<sup>94</sup> *ibid.* at para 43.

<sup>95</sup> *ibid.* at paras 46–49. (Emphasis added)

<sup>96</sup> S Woolman ‘My Tea Party, Your Mob, Our Social Contract: Freedom of Assembly and the Constitutional Right to Rebellion in *Garvis v SATAWU (Minister For Safety & Security, Third Party)*’ 2010 (6) SA 280 (WCC) (2011) 27 *South African Journal on Human Rights* 346. The Constitutional Court has retained, for itself, the right to intervene when it believes such disruptions pose an imminent and pronounced danger to the general welfare of the commonweal. The Court’s awareness of such a danger first revealed itself in *Glenister v President of the Republic of South Africa*. [2011] ZACC 6, 2011 (3) SA 347 (CC), 2011 (7) BCLR 651 (CC). The Court’s concerns with potentially catastrophic breaches of the rule of law have taken shape over the last few years.

Sixteen years down the road, the time the *Modderklip* Court feared might arrive was no longer simply on our doorstep across the ‘grey green greasy Limpopo River’.<sup>97</sup> It was in the house. In *Economic Freedom Fighters v Speaker of the National Assembly*, the Chief Justice described this unfortunate moment in South African history as follows:

One of the crucial elements of our constitutional vision is to make a decisive break from the unchecked abuse of State power and resources that was virtually institutionalized during the apartheid era. To achieve this goal, we adopted accountability, the rule of law and the supremacy of the Constitution as values of our constitutional democracy. For this reason, public office-bearers ignore their constitutional obligations at their peril. This is so because constitutionalism, accountability and the rule of law constitute the sharp and mighty sword that stands ready to chop the ugly head of impunity off its stiffened neck.<sup>98</sup>

‘A politics of accountability’ overcame an authoritarian and extractive Presidency: but only momentarily.<sup>99</sup>

The failure of the executive, the legislature and innumerable state actors to abide by the most *de minimis* conception of the rule of law required a constellation of state actors and non-state actors to stand up and say: ‘If we continue this way, we flirt with the possibility of a failed state.’ A democracy does not come into being merely because a basic law is enacted. As this narrative of a politics of accountability suggests, middle-income countries perform best when they work with the grain. Brian Levy explains his neologism ‘working with the grain’ and the methodology for integrating governance and development as follows:

[Nations can be distinguished along] two dimensions of governance: ... whether the rules of the game center around personalized deal-making or the [relatively] impersonal application of the rule of law. [This] approach [concentrates] ... less on distinctive governance patterns of incentive and constraint and more on how governance and growth interact. This longer-run perspective can usefully be framed in terms of three phases of a virtuous circle: initiating change, building momentum, and sustaining momentum ... While virtuous circles unfold differently along each of the dominant and competitive trajectories, the interactions between governance and growth that propel forward movement are akin to a snowball that builds in size as it rolls

<sup>97</sup> I Muvingi ‘The Politics of Entitlement and State Failure in Zimbabwe’ (2008) 40 *Peace Research* 77; D Nhongo *The Story of Africa: Why Zimbabwe is a Failed State and How to Transform It* (2019). The post-Mugabe Zimbabwe remains a military dictatorship with inflation running at a staggering 836% per annum as of July 2020. ‘Hyperinflation in Zimbabwe’ *Trading Economics* (September 2020), accessed at <https://tradingeconomics.com/zimbabwe/inflation-cpi>:

The country’s economic crisis is expected to deepen (in 2020) amid a weakening currency on the back of the global pandemic, together with the government’s inability to deliver economic reforms and persistent shortages of food due to successive poor harvests.

<sup>98</sup> *Economic Freedom Fighters v Speaker of the National Assembly; Democratic Alliance v Speaker of the National Assembly* [2016] ZACC 11, 2016 (3) SA 580 (CC) (‘*Economic Freedom Fighters*’ or ‘*EFF*’) at para 1.

<sup>99</sup> S Woolman ‘The Politics of Accountability: How the South Africa’s Judicial Recognition of the Binding Legal Effect of the Public Protector’s Recommendations Had a Catalyzing Effect that Brought Down a President’ (2017) 8 *Constitutional Court Review* 155, 157. See also H Klug ‘Accountability and the Role of Independent Constitutional Institutions in South Africa’s Post-Apartheid Constitutions’ (2015/2016) 60 *New York Law School Law Review* 153, 153. Prior to the Constitutional Court cases canvassed herein, Klug noted that:

[the Court and other state actors had forged a] system of governance in which there are multiple sites of power and authority to which political and social groups in conflict may repeatedly turn in their attempts to be both heard and to protect their interests [and] goals.

ibid. at 153

down a hill. As long as momentum can be sustained, by the time the snowball gets to the bottom of the hill, it will have built up formidable power, irrespective of where it started.<sup>100</sup>

For a time, the South African snowball both initiated change and built momentum. The ‘politics of accountability’ describes a brief period of time in which a political subaltern produced a landscape in which a reciprocal relationship between the rule of law and civil society created a virtuous circle that had positive political consequences.

It remains easy enough to recount the virtuous circles of snowballing, reciprocal relationships and catalytic effects between state institutions committed to the rule of law and a robust civil society over the better part of the last decade. The *Mail & Guardian*’s December 2009 story about Nkandla set off alarm bells.<sup>101</sup> Mandy Rossouw detailed the existing and ongoing expansion of President Zuma’s private home – and the estimated cost of R65 million to be borne by the public. The government initially denied any knowledge of such a development. The President’s Office then tried to pip the *Mail & Guardian* to the post by explaining that an expansion was indeed in progress: ‘No government funding will be utilised for construction work.’<sup>102</sup> As the story gained traction, the Public Protector’s Office launched its own investigation in January 2012. On 19 March 2014, the Office issued its findings. The *Secure in Comfort Report* reveals breaches of any number of laws, regulations and policy, improper conduct and maladministration by numerous departments, ministers and the President, multiple conflicts of interest, disappearing documents, and a final estimate of R246 million for what ‘given the very humble beginnings of this project [ultimately resulted in] nothing short of a full [private] township.’<sup>103</sup> The Report’s recommendations and remedies stayed well within the Public Protector’s brief: hold the President accountable for the costs of the non-security related enhancements to his Nkandla estate; and reprimand the Ministers of the Police, the Department of Public Works and the Department of Defence ‘for the appalling manner in which the Nkandla project was handled and state funds abused’.<sup>104, 105</sup>

The Public Protector’s reports on Nkandla and the SABC (as well as the *State of Capture Report*) only possess force as a result of support from other state actors. The courts in *SABC v DA* and *Economic Freedom Fighters* gave citizens a palpable sense that a range of state and social institutions could hold the powerful ‘accountable’ – even if the two coordinate branches of government would not. In *SABC v DA*, the Supreme Court of Appeal expressed its pique that the rule of law could be so brazenly abused in a cycle of

<sup>100</sup> B Levy *Working with the Grain: Integrating Governance and Growth in Development Strategies* (2014) 9–10.

<sup>101</sup> M Roussouw ‘Zuma’s R65m Nkandla Splurge’ *Mail & Guardian* (4 December 2009).

<sup>102</sup> *ibid.*

<sup>103</sup> Office of the Public Protector, South Africa *When Governance and Ethics Fail: A Report on an Investigation into Allegations of Maladministration, Systemic Corporate Governance Deficiencies, Abuse of Power and the Irregular Appointment of Mr Hlaudi Motsoeneng by the South African Broadcasting Corporation* Report No 23 of 2013/4 (14 February 2014), accessed at <https://www.gov.za/documents/when-governance-and-ethics-fail-investigation-allegation-maladministration-systemic>.

<sup>104</sup> Office of the Public Protector, South Africa *When Governance and Ethics Fail* (14 February 2014).

<sup>105</sup> G Nicholson ‘Decoding Hlaudi: The Public Protector’s SABC Report’ *Daily Maverick* (4 March 2014). Exactly one month earlier, the Public Protector had confirmed the existence of ‘reams of dodgy reports’, circulating in the press, regarding the fraudulent behaviour committed by SABC Acting COO Hlaudi Motsoeneng, irregular salary increases, the utter disarray of the SABC Board as well as undue interference by the Minister of Communications and the Department of Communications.

corruption without apparent end.’<sup>106</sup> Not so long after the Supreme Court of Appeals judgement in *SABC v DA*, the ugly ‘head’ of impunity had his stiffened neck chopped off by the Constitutional Court.<sup>107</sup>

From 2009 onwards, the media, the Public Protector and our appellate courts had rattled the cage. This rattling had discernible knock-on effects. Public support for a two-term President and the ANC waned. That disenchantment took the form of victories by (coalitions of) minority parties in the 2016 municipal elections. Two international rating institutions lost faith in the current regime’s ability to govern effectively and downgraded the country’s sovereign credit status from investment grade to junk.

<sup>106</sup> *South African Broadcasting Corporation v Democratic Alliance* [2015] ZASCA 156, 2016 (2) SA 522 (SCA) (‘SABC v DA’) at paras 2, 3, 6 and 13 (emphasis added) quoting Bishop & Woolman ‘Public Protector’ *Constitutional Law of South Africa* (2nd Edition 2008) Chapter 24A–2:

[P]ublic administrators and state institutions are guardians of the public weal[th] ... [C]onstitutional states [possess] checks and balances to ensure that when any sphere of government behaves aberrantly, measures can be taken to ensure compliance with constitutional [and other] legal prescripts ... [T]he Public Protector is one important defense against maladministration and corruption ... ‘The Public Protector’s brief is to watch the watchers and to guarantee that the government discharges its responsibilities without fear, favour or prejudice.’ [I]n order to ensure governmental *accountability*, it has become necessary for the guards to require a guard ... In ... our constitutional scheme ... the Public Protector ... guards the guards ... The Public Protector concluded that there were pathological corporate governance deficiencies at the SABC and that Mr Motsoeneng had been allowed ‘by successive boards to operate *above the law*’ ... Appointing Motsoeneng in a permanent position would have been unlawful and irrational even if all the correct procedures had been followed. However, not only did the Board and the Minister appoint an admitted fraudster who had single handedly cost the SABC tens of millions ... and completely undermined public confidence and good corporate governance, it completely ignored the relevant provisions when it did so ... [We] tell this sordid tale with reference to all the *media reports* as a source. (Emphasis added)

The Court places particular emphasis on the role of the media in safeguarding the rule of law. The Court adds: ‘The Public Protector cannot realise the constitutional purpose of her office if other organs of state [were entitled to] ... ignore her recommendations. Section 181(2)(c) must ... be taken to mean what it says. The Public Protector may take remedial action herself ... [T]his watchdog should not be muzzled.’ *ibid.* at paras 52–53. The Supreme Court of Appeal held that organs of state must view adverse findings, as well as recommendations and remedies, in reports by the Public Protector as having binding legal effect. What truly exercised the court was the obdurate refusal by the Minister of Communications and the SABC to recognise that the Public Protector exists in order to ensure that the governors are subject to the same law as the governed. *ibid.* at paras 47 and 52.

<sup>107</sup> Against the background of the diminished status of the President and the ANC, the Constitutional Court continued to hold state actors accountable. In *Black Sash Trust*, the Court found that the repeated failure (after multiple court orders) of the Minister to create a viable social grant payment system was so indefensible that it ordered an investigation into whether she should pay court costs out of her own pocket. *Black Sash Trust v Minister of Social Development* [2017] ZACC 8, 2017 (3) SA 335 (CC) (‘*Black Sash Trust*’) at para 3. ‘The Minister is called upon to show ... why she should not pay costs ... from her own pocket.’ Holding individual ministers accountable – piercing ‘the political veil’ – reflects remarkable institutional confidence and indicates that the Court has grown weary of the contempt that government officials have shown for the law and their constitutional obligations. For the Court, these actions go to the very heart of the legal system’s legitimacy. According to Fuller, a legitimate system of law must possess at least the following formal features: (a) laws must be public; (b) laws must be clear, non-contradictory and possible to obey, and prospective; (c) officials must faithfully apply the rules. L Fuller *The Morality of Law* (1969) 46–91. The courts in *SABC v DA* and *EFF* appear to be troubled by the proposition that a time may come when the ‘system’s failure to observe [these basic] principles of legality’ causes us to say that ‘it is no longer a system of law at all.’ J Waldron ‘Positivism and Legality: Hart’s Equivocal Response to Fuller’ (2008) 83 *New York University Law Review* 1135, 1141.

The next significant judicial challenge to the status quo occurred when the Constitutional Court decided that the Speaker of the National Assembly had the power to decide whether or not a motion of no confidence could be determined by secret ballot. Relying heavily upon an array of constitutional commitments to accountability, the Court set fairly stringent criteria as to whether the Speaker's decision would be viewed as rational if taken upon review.<sup>108</sup> So cabined, the Speaker decided to hold the motion of no confidence by secret ballot. These judgments reflect the catalytic effects of prior decisions made by the Court and the Public Protector. The Court then extended its rule of law doctrine into the legislative rule-making process itself. A majority held that the National Assembly had breached its constitutional obligations – this time in terms of s 89(1) and s 42(3) – by failing to promulgate rules regulating the removal of a President and to hold hearings to determine whether the prior findings regarding President's illegal behaviour met the s 89's criteria for removal:

The case is about Parliamentary mechanisms for holding the President of the Republic *accountable* and the constitutional obligations of the National Assembly to hold him *to account*. It is ... about the National Assembly holding ... President Jacob Zuma ... *accountable* for his failure to implement the Public Protector's remedial action.<sup>109</sup>

The expansion of the rule of law doctrine's reach had two medium-term consequences. First, the Public Protector broadened the scope of her inquiries into the illicit activities of the President and his vast patronage system. Second, her probes further revealed the private actors who had benefitted immensely from a blurring of the lines between the public domain and the private realm. In terms of our interest in the reciprocal relationship between the rule of law and a more robust and just civil society, the *State of Capture Report's* intense scrutiny of private actors pilfering the public purse is of particular interest. The catalytic effect of prior decisions by courts, independent institutions, the press, members of government, the electorate and individual members of Parliament made possible the exposure of brazen corruption by McKinsey and SAP,<sup>110, 111</sup> the truly outrageous abuse

<sup>108</sup> *United Democratic Movement v Speaker of the National Assembly* [2017] ZACC 21, 2017 (5) SA 300 (CC) ('*United Democratic Movement*') at paras 92–94.

<sup>109</sup> *Economic Freedom Fighters, United Democratic Movement, Congress of the People & Democratic Alliance v Speaker of the National Assembly* [2017] ZACC 47, 2018 (2) SA 571 (CC), 2018 (3) BCLR 259 (CC) ('*EFF IT*') at para 1. (Emphasis added)

<sup>110</sup> W Bogdanich & M Forsythe 'How McKinsey Lost Its Way in South Africa' *The New York Times* (26 June 2018), accessed at <https://www.nytimes.com/2018/06/26/world/africa/mckinsey-south-africa-eskom.html>; M Marriage & J Cotterill 'McKinsey Unclear How to Repay South Africa Scandal Fees' *Financial Times* (4 March 2018), accessed at <https://www.ft.com/content/8e310198-1c91-11e8-aaca-4574d7dabfb6>:

McKinsey is trying to return fees earned from a contract that has been tainted by ties to the country's controversial Gupta family but does not know where to send the money, according to the head of the consultancy ... McKinsey earned about R1bn from its work with Eskom, the state-owned power utility at the centre of a sprawling corruption scandal, in 2015.

<sup>111</sup> 'McKinsey Humbled in Graft Probe of Private Sector' *Bloomberg Next Africa* (11 December 2020), accessed at <https://www.bloomberg.com/news/newsletters/2020-12-11/next-africa-south-african-graft-and-an-embarrassed-mckinsey>:

McKinsey & Co., one of the world's biggest management consultancy firms, this week humbled itself before a South African judicial inquiry into government-related graft. The firm pledged to return 650 million rand (\$43 million) in fees to Transnet, the state logistics company, and South African Airways. That money came from joint contracts with a firm linked to the Gupta brothers, who have been accused of influencing South African government appointments for their own gain and have refused to return

of accountability by the accounting firm KPMG,<sup>112</sup> and the Ponzi scheme still known as Steinhoff.<sup>113</sup> Of course, no firm sunk as low as Bell Pottinger. Thanks to the United Kingdom's regulatory body for advertising, this public relations firm – hired to deflect attention away from the Zuma-Gupta scandal by exacerbating already extreme racial tensions through a furtive social media campaign – no longer exists.<sup>114</sup>

By holding the President, the National Assembly, Ministers, organs of state and private parties accountable, the official guardians and the civic protectors of the rule of law created the requisite space for regime change. Of course, the media, the Public Protector and the courts alone could not orchestrate such a transformation. The citizens of South Africa *had* a reciprocal relationship with these state actors and ultimately provided the most important catalytic effects. In the municipal elections of 2016, an informed electorate – tired of Zuma's kleptocracy – delivered a stunning blow to the ruling party. The ANC lost South Africa's major metropolises to individual minority parties or coalitions of minority parties. The electorate's 2016 experience of success – a message sent by the stayaway of ANC supporters – had a reciprocal effect on their own behaviour. In December of 2017, members of the ANC had a second opportunity to send a message to the ruling party. In Ramaphosa, ANC branch members had an alternative to the next Zuma, Dlamini-Zuma. Term limits meant that Zuma himself could not run again. On 18 December 2017, members of the ANC attending the party's 54th Elective Conference chose a new

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from Dubai to face corruption charges. McKinsey's chief risk officer, Jean-Christophe Mieszala, testified before the commission, admitting mistakes and to 'terminating' employees for their role. He didn't admit corruption on behalf of McKinsey. It may not be enough. Transnet claims it's owed more than 1.2 billion rand and Iraj Abedian, one of the country's most prominent economists, questioned how the company could set its own terms of atonement. McKinsey has paid before. In 2018, it returned 1 billion rand to the state power utility, Eskom, for participating in similarly tainted compacts. It no longer accepts lucrative contracts to help South African state companies and has declined to say what is left of the rest of its business in Africa's most-industrialized nation. 'From South Africa we learned some lessons,' Mieszala said at the inquiry. 'We should have known whom we were dealing with.' It's easy to forget that McKinsey isn't alone. KPMG, SAP and Bain & Co. have been ensnared in South African graft probes, while contracts Eskom concluded with some of the world's biggest engineering firms are being investigated.

<sup>112</sup> T Malaudzi 'ABSA Drops KPMG as External Auditor' *Eyewitness News* (3 May 2018), accessed at <https://ewn.co.za/2018/05/03/absa-drops-kpmg-as-external-auditor>. After being found to have engaged in false reporting to the South African Revenue Service, the South African office of this internationally renowned auditing firm shed most of its senior executives and lost a substantial portion of its clients, including the Auditor-General. This last loss is a first for a big four accounting firm.

<sup>113</sup> A Crotty 'Focus Shifts to Steinhoff Austria's Ten-fold Value Hike' *Business Day* (4 May 2018), accessed at <https://www.businesslive.co.za/bd/companies/retail-and-consumer/2018-05-04-focus-shifts-to-steinhoff-austrias-tenfold-value-hike/>. A company whose value stood at R9 billion managed to secure a place on the Frankfurt Stock Exchange in 2015 with a market capitalisation of R198 billion.

<sup>114</sup> D Segal 'How Bell Pottinger, PR Firm for Despots and Rogues, Met Its End in South Africa' *The New York Times* (4 February 2018), accessed at <https://www.nytimes.com/2018/02/04/business/bell-pottinger-guptas-zuma-south-africa.html>. See also L Omarjee 'Gupta Leaks May Be Sword that Undoes SA's Gordian Knot – Manuel' *Finance 24* (19 September 2017):

Former finance minister Trevor Manuel said: 'For a while we have seen the weakening of institutions to the point of their destruction ... We see the unravelling of what has been bad in the country. We see the challenges facing KPMG ... [and] McKinsey. We see all the shenanigans in SARS.'

party President. The new party President, Cyril Ramaphosa, then managed to ease out his predecessor in less than two months.<sup>115, 116</sup>

The ostensible unravelling of ‘what has been bad in the country’ – Trevor Manuel’s utterly hollow words – resulted in a significant loss of ground at the 2019 national elections for the ruling party. However, the ANC-led alliance still managed to maintain the razor slim majority of 53% necessary to rule.

What should be clear from the narrative above is that catalytic events require ongoing catalysis. Catalytic events gain traction slowly. Changes are slow largely because the reciprocal responses of various state actors and non-state actors to the actions of one another are predominantly non-deliberative.<sup>117</sup> That is, we don’t actually ever have a conversation

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<sup>115</sup> Buried in this narrative is a provision not often mentioned: s 88 of the Constitution. This provision limits Presidents to two terms of five years. What most readers might not recall is that Cyril Ramaphosa took up his position as Deputy President of the ANC in December 2012. He returned to politics in the quietest possible manner. His service to the party did not prevent him from continuing to amass sizeable wealth in the private sector. However, his long game – tied to Presidential term limits – continued to bear fruit when President Zuma could no longer tolerate Deputy President Kgalema Motlanthe’s criticism. Zuma forced Motlanthe’s official exit in May of 2014. South African Press Association ‘Motlanthe Bids Adieu to Parliament’ *ENCA News* (12 March 2014), accessed at <http://www.enca.com>.

<sup>116</sup> For the better part of the next three years, he remained quiet, and even apologised to the President and the NEC for briefly speaking out about corruption. Given s 88, Ramaphosa need only to wait. However, his knowledge of term limits and ANC politics would have amounted to nothing, but for the work of the media, the Public Protector, minority parties, the courts and the citizens themselves in orchestrating a reset of South African politics through municipal elections in 2016 and internal ANC party politics in 2017. M Gallens ‘Cyril Ramaphosa, New President of the ANC’ *News24* (18 December 2017), accessed at <http://m.news24.com>: ‘Ramaphosa became deputy president [of the ANC] ... in 2012. At the time, he was wooed by President Jacob Zuma’s camp to give the state “credibility” when the ANC deputy president contested Zuma for the top spot.’ See also R Munusamy ‘Dateline Mangaung: The Return of the Chosen One, Cyril Ramaphosa’ *Daily Maverick* (20 December 2012), accessed at <http://www.dailymaverick.co.za>.

<sup>117</sup> As Chapter II demonstrated, this book places limited stock in the deliberative democratic literature that dominates political philosophy, though not political science, economic theory and sociology. Deliberative democracy experienced a revival in the 1990s, with the publication of a slew of books and articles that sought to place public reason and popular participation at the centre of democratic theory. The most prominent works are A Gutmann & D Thompson *Democracy and Disagreement* (1996); J Bohman & W Rehg *Deliberative Democracy: Essays on Reason and Politics* (1997); J Elster (ed) *Deliberative Democracy* (1998); and S Macedo (ed) *Deliberative Politics: Essays on Democracy and Disagreement* (1999). Bohman and Rehg, for example, claim that ‘leftist political activism, with its emphasis on participatory democracy, sparked renewed interest in the possibilities for consensual forms of self-government.’ Bohman & Rehg *Deliberative Democracy* at xii. However, although it is true that political theorists demonstrated some interest in deliberative forms of democracy in the 1970s and 1980s, it was only after the publication of Gutmann and Thompson’s seminal work *Democracy and Disagreement* in 1996 – and a number of subsequent publications which elaborated on their argument – that deliberative theory really gained momentum and prominence. Why did this revival take place in the 1990s? The ascendance of democracy and human rights after the collapse of the Soviet Union sparked a wave of optimism in the potential for liberal democracy worldwide. In that historical moment, with the primacy of human rights and democratic freedom seemingly secured, many believed that we could find common ground through discourse and popular participation. Until then, democratic theory had been far from deliberative in its orientation. For most of the 20th century, Schumpeterian models of democracy, in which the role of a democratic public was merely to hold its government accountable through the threat of removal, had been predominant. Following on Schumpeter and earlier writers like Max Weber, economists and political theorists together argued that it was not reasonable to expect a democratic process to produce a shared vision of the ‘common good’ which elected leaders could then pursue. Democratic engagement was limited to periodic elections in which different

between some 60 million of our citizens: rather, we take our cues from the constructive actions of other actors, who respond, one hopes, in a reciprocal and catalytic manner to our own constructive behaviour.

At the time, one might have hoped that the 2016 and 2019 elections would constitute a ‘critical juncture’ that might usher in a more inclusive set of political and economic policies and institutions. Ramaphosa’s ‘revived’ party could have reinforced the narrative of a politics of accountability (that enabled his rise to power) by appointing competent Ministers to appropriate posts, cleaning house and addressing big ticket items such as land reform, resource scarcity, bankrupt and dysfunctional SOEs, a contracting economy and unsustainable levels of unemployment.

Our state and non-state actors have not engaged in the kind of collective action that would produce much-needed public goods nor substantial shifts in institutional behaviour. A riven ANC – with two factions pulling in opposite directions – has over the past three years produced few major policy changes that might produce the public goods that the majority of people so desperately require; nor has it made the institutions that govern us

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groups would coalesce behind competing political programmes and express their approval or disapproval of incumbent leaders. Between elections, it was ultimately the role of elected officials and experts to devise and implement policies based not on ‘public consensus’ or direct mandate, but rather on their own beliefs about the best course of action. Robert Dahl’s pluralist model emphasised competing group interests as the prevailing condition of complex modern democracies and held that different comprehensive visions of the good could exist within the same political framework. Where Schumpeter and Dahl agreed was that democracy is less about agreeing on a common good and more about aggregating and mediating between different interests in a pluralistic society. J Schumpeter *Capitalism, Socialism and Democracy* (1943); R Dahl *Dilemmas of Pluralist Democracy* (1982). The empirical turn of the late 1990s and 2000s found in theories of democratic experimentalism and behavioral economic theory – and the underlying notion that competition, friction, trial and error, reflexivity and feedback mechanisms generate change – drives this book. S Woolman *The Selfless Constitution: Experimentalism and Flourishing as Foundations of South Africa’s Basic Law* (2013); M Dorf & C Sabel ‘A Constitution of Democratic Experimentalism’ (1998) 98 *Columbia Law Review* 267; M Dorf & B Friedman ‘Shared Constitutional Interpretation’ (2000) *Supreme Court Review* 61; C Sabel & W Simon ‘Destabilization Rights: How Public Law Litigation Succeeds’ (2004) 117 *Harvard Law Review* 1015; R Thaler *Misbehaving: The Making of Behavioural Economics* (2015); R Thaler & C Sunstein *Nudge: Improving Decisions about Health, Wealth and Happiness* (2008). In an unpublished work – ‘Pushing, Shoving and Shaking: The Improbability of Deliberative Democracy in South Africa’ – I defend a theory of non-deliberative democracy consonant with the problems of collective action laid out at length in Chapter II and ‘a politics of accountability’ laid out here in Chapter V. It assumes little understanding by citizens of the laws or institutions that govern them and suggests that friction, experimentation and protests produce more optimal solutions to social, economic and political problems than does deliberation. That’s so because we fail to acknowledge that our practices are radically determined natural and social endowments, and that constructive change occurs predominantly through trial-and-error and more rough and tumble forms of contestation. One reason assemblies and demonstrations work so well is that they often bring conflicts between individuals, communities and the state out into the open. S Woolman ‘My Tea Party, Your Mob, Our Social Contract: Freedom of Assembly and the Constitutional Right to Rebellion in *Garvis v SATAWU*’ (2011) 27 *South African Journal on Human Rights* 346. Peaceful political change on a rather large scale is rare. For the most part, what a politics of non-deliberative democracy does do is to curb our expectations about what political institutions can do, concentrate on abuses of power by the officials who govern us and enable persons in charge of various social formations to nudge us towards more optimal ways of being in the world. L Diamond & M Plattner (eds) *Democracy in Decline?* (2015); Freedom House *Democracy in Crisis* (2017): Reveals that the number of setbacks in democracy outpaced gains for the 12th straight year); Pew Research Centre *By the People* (2018): 24% of global participants favoured rule by the military; 26% favoured a strong leader unconstrained by a legislature or a judiciary; I Somin *Democracy and Political Ignorance: Why Smaller Government is Better* (2016).

more inclusive rather than largely extractive. (More disturbingly, the COVID-19 pandemic has offered both factions the opportunity to consolidate the ANC's control of the main levers of political power. Pandemics make strange bed-fellows.)

The Constitutional Court has kept up the pressure. In *My Vote Counts*, the Constitutional Court was compelled by civil society organisations to decide whether the Constitution imposes an obligation on Parliament to pass legislation that provides for the disclosure of information with respect to the private funding of political parties and independent candidates.<sup>118</sup> The Promotion of Access to Information Act 2 of 2002 (PAIA) regulates the disclosure of such information, but, as currently constructed, did not yet require disclosure of such contributions. The *My Vote Counts* Court found this lacuna in the law to be inconsistent with Sections 32 (the right to information), 7(2) (rights as cornerstones of democracy) and 19 (political rights) of the Constitution, when read together.<sup>119</sup> The Court held that the state is under an obligation to do everything reasonably possible to give practical and meaningful expression to both the right of access to information and the right to vote because first, the exercise of the right to vote must be an informed choice and 'without access to information, the ability of citizens to make responsible political decisions and participate meaningfully in public life is undermined' and second, an active citizenry that exercises the franchise is the only real means by which politicians can be held accountable.<sup>120, 121</sup> Or to put the holding slightly differently: the *My Vote Counts* Court has enabled the people to 'follow the money'.<sup>122</sup>

In *New Nation Movement*, the Court presses its characterisation of our political parties radical dysfunction even further.<sup>123</sup> On its face, the Court holds that the Electoral Act's requirement that a citizen be a member of a political party in order to be elected to the National Assembly violates Sections 19 and 18 of the Constitution because it effectively coerces individuals into belonging to a political party that does not reflect their beliefs about what is best for the commonweal. Given that the freedom of association precludes the state or any other entity from forcing a citizen to belong to any given association, it's a more than plausible argument.<sup>124</sup> As written, *New Nation Movement* takes seriously the plaintiffs' claim that no extant party constitutes an association through which a citizen could engage in meaningful self-governance and in the production of public goods. It's hardly much of a leap to connect the Court's judgments about the failure of the coordinate branches to abide by the dictate of the Constitution with the well-established factual

<sup>118</sup> *My Vote Counts NPC v Minister of Justice and Correctional Services and Another* [2018] ZACC 17, 2018 (8) BCLR 893 (CC), 2018 (5) SA 380 (CC).

<sup>119</sup> *ibid.* at para 73.

<sup>120</sup> *ibid.*

<sup>121</sup> In a concurring judgment, Froneman J explained that that the right to vote belongs to the entire body politic and that to view the right as an individual right fails to understand the Constitution's foundational commitment to popular sovereignty and democracy – government by and for the people. *ibid.* at para 95.

<sup>122</sup> As a result of *My Vote Counts*, Parliament promulgated the Political Party Funding Act 6 of 2018. According to the Act, political parties must report to the Independent Electoral Commission any donation of R100 000 or more. This political finance legislation will facilitate the ability of government auditors (and other actors) to connect 'campaign contributions' to potentially illicit tender awards.

<sup>123</sup> *NPC v President of the Republic of South Africa* [2020] ZACC 11.

<sup>124</sup> *ibid.* citing S Woolman 'Freedom of Association' in S Woolman & M Bishop (eds) *Constitutional Law of South Africa* (2nd Edition, 2014) Chapter 44.

predicate that the political parties that govern us have also failed to discharge their manifold obligations to pursue the common good through representational institutions. Why should any citizen be forced to join any given political party when the rent-seeking behaviour of our three major political parties has been on full display for well over a decade? For a Court that justifiably places the rule of law at the top of its checklist, this shake-up of the electoral scheme serves notice to existing and future parties, and their leaders, that they cannot use the privilege of representing the people to advance the pecuniary interests of its members.

For now, we have but one branch of government willing to hold the line. But the Court, however expansive its reading of the Constitution, cannot prevent clientelism, cronyism or corruption, or undo the underlying and long-standing social, economic and political substructures that keep the majority of South Africans mired in grinding poverty. It can serve as a hammer: a hammer which in the hands of committed state and non-state actors can be used to pound out or nail together those inclusive political and economic institutions necessary for the creation of a just and fair society. The Constitutional Court's persistent efforts to break down the extractive arrangements between state and society merely creates the opportunity for inclusive social and political formations to take shape. The rest of us will, somehow, have to find one another for that to happen.

The South African people deserve immense credit for doing what they can in the face an obdurate, mendacious and callous political apparatus. Indeed, three months before this book went to bed, COSATU and NUM announced a day-long strike on 7 October 2020 to call the government to account for its persistent failure to indict any current or former member of state for corruption.<sup>125</sup> The conversation between the Court and the people is one of the most interesting narratives of the last decade – and one tangible source of hope.

Hope is sometimes rewarding, when married to a bit of industrial arm-twisting. It's difficult to be sure what to make of the post-strike announcement of arrests of public sector and private sector thieves and vagabonds. However, Luthuli House (ANC Headquarters) had reason to be nervous when (shortly after COSATU's strike-stayaway announcement) the National Prosecuting Authority began a series of arrests around the country.<sup>126</sup> From asbestos scandals in the Free State,<sup>127</sup> to the VBS bank scandal,<sup>128</sup> at least part of the governing party's corrupt patronage system and their private sector beneficiaries are having their cages rattled. Of course, charges and arrests are not convictions and former President Zuma has been found in contempt of judicial proceedings during the Zondo Commission, has had criminal charges laid against him, and must answer to an urgent appeal to the

<sup>125</sup> 'Cosatu Asks Workers to Stay Home on Wednesday for Nationwide Strike' *Polity* (6 October 2020), accessed at <https://www.polity.org.za/article/cosatu-asks-workers-to-stay-home-on-wednesday-for-nationwide-strike-2020-10-06>. 'Due to the Covid-19 pandemic, workers have been asked to stay at home, rather than congregate in the streets.'

<sup>126</sup> Ferial Haffajee 'Luthuli House Trembles as Anti-Corruption Drive Hits Its Doorstep' *Daily Maverick* (2 October 2020), accessed at <https://www.dailymaverick.co.za/article/2020-10-02-luthuli-house-trembles-as-anti-corruption-drive-hits-its-doorstep/>.

<sup>127</sup> N Ngatane 'NPA Arrests in Free State Asbestos Corruption Case Just the Tip of the Iceberg: Investigations Are Revealing that More People are Involved in the R255 Million Free State Asbestos Project' *Eyewitness News* (2 October 2020), accessed at <https://ewn.co.za/2020/10/02/npa-arrests-in-fs-asbestos-corruption-case-just-the-tip-of-the-iceberg>.

<sup>128</sup> D Rensburg 'Former VBS Finance Boss Philip Truter Strikes Deal with NPA' *AmaBhungane & Daily Maverick* (7 October 2020), accessed at <https://www.dailymaverick.co.za/article/2020-10-07-vbs-finance-boss-philip-truter-strikes-deal-with-npa/>.

Constitutional Court regarding his brazen obstruction of the Commission's mission.<sup>129</sup> Zuma? He walked out and kept on walking.<sup>130</sup> He has now, at the end of December 2020, been forced to return and to talk.

While Zuma has decades of avoiding judicial proceedings behind him, Magashule is just getting started. Having learned from the master, the ANC Secretary General had some 200 charges laid against him for corrupt practices in the Free State.<sup>131</sup> On 13 November 2020, the second in command of the ANC was released on bail.<sup>132</sup> Whether he agrees to step aside from his positions while these charges work their way through the legal system remains to be seen. However, Zuma and Magashule's trees have been shaken, even if no concrete result is likely to be seen for quite some time.

Unfortunately, we've been here already. The recent boorish behaviour of Zuma and Magashule can hardly be said to be novel, or even represent the thin legal edge of the wedge. You can read the *Economic Freedom Fighters I*, *Economic Freedom Fighters II*, *Black Sash*, *My Vote Counts*, *New National Movement* – along with at least a dozen *SASSA and Minister of Social Development* matters brought before the Constitutional Court – to get a sense of how far the Court believes the executive and legislative branches of government have departed from the most basic precepts of the rule of law.

However, our ability to hold our political institutions out to the world as committed to even the most *de minimis* rule of law goes beyond the corruption associated with Zuma, Magashule, the Guptas, Bell Pottinger, Accenture and an entire cast of state and social actors engaged in rent-seeking behaviour. That story is in the process of being revealed in depth by the Zondo Commission and other scholars. Unfortunately, the rule of law has been undermined even further because the High Courts themselves can neither hear nor render judgment on the matters before them. As of December 2020, an extremely large number of High Court divisions around the country lack not only an adequate number of judges to hear most of the matters on dockets but also the technical facilities – from Wi-Fi and various other electronic media – and the administrative assistance to adjudicate most matters. The current backlog means that justice deferred will result in justice denied – to the parties involved as well as to broader society served by our judicial system.<sup>133</sup> In addition, in a matter that would have vexed the *Glenister* Court (and justified their analysis and conclusions), the SAPS head of the Anti-Gang Unit, Charl Kinnear, was assassinated

<sup>129</sup> F Haffajee 'Zondo Gets Hard Core on Zuma' *Daily Maverick* (23 November 2020), accessed at <https://www.dailymaverick.co.za/article/2020-11-23-zondo-gets-hardcore-on-zuma-throws-every-legal-lasso-including-urgent-approach-to-constitutional-court/?utm>.

<sup>130</sup> F Haffajee 'I Didn't Run Away' *Daily Maverick* (19 November 2020), accessed at <https://www.dailymaverick.co.za/article/2020-11-19-jacob-zuma-i-didnt-run-away/>.

<sup>131</sup> 'Top A.N.C. Official Charged With Corruption in South Africa: The Secretary General of the Governing African National Congress Faces 21 Charges including Kickbacks and Fraud, in a Case likely to Deepen Divisions within the Party' *The New York Times* (13 November 2020), accessed at <https://www.nytimes.com/2020/11/13/world/africa/anc-corruption-south-africa.html>.

<sup>132</sup> E Mabuza 'ANC Secretary-General Ace Magashule Released on Bail of R200,000' *The Sowetan* (13 November 2020), accessed at <https://www.sowetanlive.co.za/news/south-africa/2020-11-13-anc-secretary-general-ace-magashule-released-on-bail-of-r200000/#>.

<sup>133</sup> T Broughton 'Desperate Message from Senior Judge Shows Court Infrastructure is Breaking Down' *Daily Maverick* (9 October 2020), accessed at <https://www.dailymaverick.co.za/article/2020-10-09-desperate-message-from-senior-judge-shows-court-system-is-breaking-down/>.

in what has all the hallmarks of an inside job.<sup>134</sup> When the arm of the executive charged most immediately with executing the rule of law instead executes one of its own, it's fair to say that the scales of justice have tipped back toward a more Hobbesian conception of 'freedom' than the norms enshrined in the Constitution contemplate.

Hope was, as we all know, the last emotion to crawl out of Pandora's Box. South Africa has already been through one hopeful reset of the political process – and nothing ultimately came of the reset save for ANC losses at the municipal and national polls from 2016 to 2019. While recent arrests might offer a glimmer of hope, long drawn-out fights in the courts is not the same as having a political party capable of governing the country. In early December 2020, the ANC's National Executive Committee met to attempt to grapple with core issues within the party that:

- prevent it from governing the country as matters stand;
- preclude it from remaining a coherent entity that voters would show their faith in at the ballot box; and
- thwart it from playing its constitutionally mandated role that all actors in South Africa must follow, collectively, in order to dig ourselves out of an extremely deep (and perhaps inescapably permanent) hole (as Michael Sachs and others have noted several times above).

Some of the attendees had rather positive reports about the state of the union and the state of the party.<sup>135</sup> Some have vowed to get tough on corruption.<sup>136</sup> But, if anyone cares to read the newspaper, it's quite clear that the ANC NEC – and the rest of the tripartite alliance – is simply repeating exactly the same story from years ago.<sup>137</sup> As Ivor Chipkin predicted, the manner in which the ANC controlled the state as an extension of the party could readily cause it to split or fragment. One scenario that he offered took the form

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<sup>134</sup> M Thamm 'Age of the Assassin: Charl Kinnear's Nine Months of Hell Detailed in SAPS Report into Threats on His Life' *Daily Maverick* (6 November 2020), accessed at <https://www.dailymaverick.co.za/article/2020-11-06-charl-kinnears-nine-months-of-hell-detailed-in-saps-report-into-threats-on-his-life>:

A January 2020 internal SAPS record of communication with regard to the personal security of Anti-Gang Unit Section Head, Charl Kinnear, details grave concern for his personal safety, so much so that he was transferred out of the unit back to his 'station of origin' in Sea Point.

Kinnear's murder by insiders says everything about the police being able to maintain the rule of law within law enforcement agencies. Friends of mine within the ANC, who have been threatened with hits in various provinces, had to decide whether the important solutions to broken provincial administrative structures were worth the risk of assassination. Such threats over the last 15 years reverses the spin of Von Clausewitz's cheeky but true realpolitik maxim that 'war is the continuation of politics by other means.' It's no wonder that the *Glenister* Court held that – in terms of the Constitution and international treaties to which the nation is party – a wholly independent investigative unit free from executive interference was necessary to ensure that the democracy grounded in section 7(2) of the Constitution could be brought into being. *Glenister v President of the Republic of South Africa* [2011] ZACC 6, 2011 (3) SA 347 (CC), 2011 (7) BCLR 651 (CC). Left

<sup>135</sup> N Koze 'Magashule Briefs Media on Outcomes of ANC NEC Meeting' *702News* (9 December 2020), accessed at <http://www.702.co.za/articles/388517/watch-magashule-briefs-media-on-outcomes-of-anc-nec-meeting>.

<sup>136</sup> 'Ramaphosa Confronts Corruption Culture at Vital ANC NEC Meeting' *BusinessTech* (8 December 2020), accessed at <https://businesstech.co.za/news/government/455208/ramaphosa-confronts-corruption-culture-at-vital-anc-nec-meeting/>.

<sup>137</sup> T Mahlakoana 'ANC NEC 3-DAY Meeting Billed as Showdown between Factions' *EWN News* (28 September 2020), accessed at <https://ewn.co.za/topic/anc-nec-meeting>: 'The ANC goes into the NEC from on Friday afternoon with pressure from its alliance partners, the Congress of South African Trade Unions and South African Communist Party having lambasted it for talking soft on corruption.' As the author noted at the time, the public was looking for any positive signs of action on the subject.

of the ANC becoming a rump party with its power based in KwaZulu-Natal, combined with other provinces in which high-powered ANC leaders remained connected to [then] President Zuma. Whether it follows that path or simply splits would leave the ANC in a position in which it could not govern.<sup>138</sup>

A fight for control of a party that may not clear 50% in the next round of elections will undercut the capacity of the state to articulate and to make manifest the kinds of dramatic change in policy necessary to alter the nation's course and its not-quite-yet-Venezuela status. However, one only gets so many bites at the cherry.

## D. The Possibilities of Inclusive Regional and Global Institutions

### *On inclusive regional institutions*

At the moment, the pandemic has hardened borders and accelerated regional and global conflicts. But that contingent fact does not mean that reinvigorated regional and global institutions cannot create and sustain more inclusive local political and economic institutions.

Let's begin with the European Union. It's the best extant example of a regional institution that might well possess the capacity to shore up and even open up the political and economic institutions of its member states.

The European Union's initial response to the COVID-19 pandemic was nothing short of abysmal:

Prof. Chris Whitty, Britain's chief medical adviser, stood before an auditorium in a London museum two years ago cataloging deadly epidemics. From the Black Death of the 14th century to cholera in war-torn Yemen, it was a baleful history. But Professor Whitty, who had spent most of his career fighting infectious diseases in Africa, was reassuring. Britain, he said, had a special protection. 'Being rich,' he explained. Wealth 'massively hardens a society against epidemics,' he argued, and quality of life – food, housing, water and health care – was more effective than any medicine at stopping the diseases that ravaged the developing world. Professor Whitty's confidence was hardly unique. As recently as February, when European health ministers met in Brussels to discuss the novel coronavirus emerging in China, they commended their own health systems and promised to send aid to poor and developing countries. 'Responsibility is incumbent on us, not only for Italy and Europe, but also for the African continent,' said Roberto Speranza, Italy's health minister. 'The European Union should be ready for support,' agreed Maggie De Block, Belgium's then health minister.<sup>139</sup>

<sup>138</sup> I Chipkin 'The Politics of Corruption: Two Competing Definitions' *Public Affairs Research Institute, Long Essay, Number 3* (October 2012). Chipkin's *oeuvre* is replete with possible scenarios about how the politics of a nation beset by corruption (in all its forms) within (and without) the ANC could result in the very end of the ANC. The only matter on which he erred concerned his hopes for and guidance for nation-building in a riven society. As is true of this book, writing prescriptively, as I did in *The Selfless Constitution: Experimentation and Flourishing as the Foundations of South Africa's Basic Law* has its dangers. In the almost eight years that have since passed, the tightly integrated formula adumbrated there found few takers. Such is the limits of academic writing. The difference here, in these pages, is that you can see the evidence for its assessment of South Africa and the rest of the world occurring in real time.

<sup>139</sup> D Kirkpatrick, M Apuzzo & S Gebrekidan 'Behind the Curve: Europe Said It Was Pandemic-Ready – Pride Was Its Downfall' *The New York Times* (20 July 2020), accessed at <https://www.nytimes.com/2020/07/20/world/europe/coronavirus-mistakes-france-uk-italy.html>!

Then the Angel of Death arrived using its scythe to cut through large swaths of Europe, not just once, beginning in late February/early March 2020, but yet again as autumn arrived in September 2020, whilst creating new lockdowns through the end of December 2020, as new variants rapidly spread. However, the European Union only needed the first wake up call to create a sum that is greater than total of its parts.

Next Generation EU (NGEU) has no precedent (especially for a regional institution that could get no more than two countries to vote on a unifying Constitution some 30 years ago.) If it works, then it may well constitute the first step toward economic unification of the 27 member states. Although framed as response toward the crisis created by the COVID-19 pandemic, the NGEU possesses several extraordinary new features. First, it allows the EU ‘to borrow huge sums from capital markets and hand it out as budgetary support to member countries.’<sup>140</sup> Second, 390 billion euros out of total package of 750 billion ‘will be distributed as grants and will therefore not add to governments’ debt burdens.’<sup>141</sup> Third, while the grants will target the member states hardest hit by the pandemic, the liability for reimbursement of the package will be *shared* by all member states.<sup>142</sup> Such a shared commitment is a first, as is the fact that some member states benefit more than others from commonly borrowed funds.<sup>143</sup> Fourth, because conditions attach to these grants, the NGEU allows for some encroachment on national sovereignty – the ability to demand that a given nation’s budget be tweaked so that it aligns with the agreement. However, it falls short of placing stringent political conditions – such as increased regard for the rule of law and democracy reinforcing mechanisms – on grants and loans. The NGEU, as originally framed, allowed Hungary and Poland to continue their illiberal political practices. It appeared to be a bet by the majority of strong, inclusive democracies on a future in which both weak states and illiberal states engaged in much-needed reforms. Yet a mere two months later, in December 2020, the participation of EU member states within the NGEU no longer appears to be contingent on a commitment to the rule of law or some future commitment to the rule of law.<sup>144</sup> As George Soros wrote in December 2020:

The European Union is facing an existential threat, and yet the EU’s leadership is responding with a compromise that appears to reflect a belief that the threat can simply be wished away. Prime Minister Viktor Orbán’s kleptocratic regime in Hungary and, to a lesser extent, the illiberal Law and Justice (PiS) government in Poland, are brazenly challenging the values on which the European Union has been built. Treating their challenge as a legitimate political stance deserving of recognition and a compromise solution will only add – massively – to the risks that the EU now faces ... [One] can also understand why the German chancellor does not want another country, Hungary, to announce its intention to leave the EU on her

<sup>140</sup> T Wieladek ‘The EU Recovery Fund: An Unprecedented Step, But No Panacea’ *T Rowe Price* (31 August 2020), accessed at <https://www.troweprice.com/content/institutional/us/en/insights/articles/2020/q3/the-eu-recovery-fund-an-unprecedented-step-but-no-panacea-na.html>.

<sup>141</sup> *ibid.*

<sup>142</sup> The NGEU appears to allow the European Central Bank to pursue its second mandate under article 3 of the Treaty of European Union: the quality of the environment, economic and social cohesion and social justice. M Sandbu ‘ECB Must Follow the Fed’s Embrace of a Second Mandate’ *Financial Times* (31 August 2020), accessed at <https://www.ft.com/content/380e6290-ded1-4050-aa5f-9c3d1b9ed2bd?>

<sup>143</sup> *ibid.*

<sup>144</sup> E van de Rakt ‘Safeguarding the Rule of Law in the EU: We Need to Put an Uncomfortable Truth into Words’ *Heinrich Boell Stiftung Working Paper* (9 December 2020), accessed at <https://eu.boell.org/en/2020/12/09/safeguarding-rule-law-eu-we-need-put-uncomfortable-truth-words>.

watch. That is reportedly what Orbán was preparing to do in recent days, because he cannot afford to have the sheer scale of his regime's corruption exposed, which the EU's 'rule of law' conditionality for the disbursement of Union funds would invariably have done. Orbán has stolen and misappropriated vast sums during his decade in power, including EU funds that should have gone to benefit the Hungarian people. He cannot afford to have a practical limit imposed on his personal and political corruption, because these illicit proceeds are the grease that keeps the wheels of his regime turning smoothly and his cronies in line ... The deal, as it is understood to exist, is ugly and flouts the express wishes of the European Parliament. But because of the urgent need to use the €750 billion (\$909 billion) COVID-19 recovery fund, the European Parliament may very well approve it ... [However] ... this compromise may severely dent the hard-won confidence that the Union's institutions have gained through the creation of the recovery fund.<sup>145</sup>

Soros' dream of a greater Europe – worthy of Beethoven's Choral – seems to be just that, a dream that refuses to die. At an earlier juncture in time, as noted above, the European Union considered a constitution that would make it more than a quasi-political, free trade zone and something close to a sovereign nation made up of member states. As for that lost opportunity and the one currently before the EU, one can understand Soros' disappointment without sharing his expectations. Again, it comes as little surprise that nations that were under communist rule until the fall of the Soviet Union, and thus operated under elitist and extractive political and economic institutions, would not readily change their stripes. Rather than see Hungary's Orbán as an aberration, it seems more accurate to depict his political and economic instincts as consistent with Hungarian history, before, during and after life behind the Iron Curtain. Moreover, advanced economies from Norway to Switzerland to Iceland to the United Kingdom have rejected EU membership. Nationalism is a religion that dies hard, especially in the face of lofty abstractions that impede the politics as usual from which Orbán and his cronies benefit.

A similar line of thought – a conceptual bet – lies behind the proponents of Regional Integration Areas (RIAs) in southern Africa.<sup>146</sup> Realists, such as Roberts, Vilakazi and Simbanegavi, contend that so long as the participants in RIAs are alive to the full array of imperfections of markets – from monopoly power, to oligopolies, to the relative weakness of state institutions as compared with economic actors, to elites moving rents out of the country without fear of future reprisal, to failures to create conditions for meaningful product differentiation, to expansive geographic dispersion, to poor infrastructure, and to limited distribution networks (*and all other conceivable anti-competitive and anti-developmental practices*) – the benefits of cooperation can be significant:

[First], [b]y opening up the regional market to domestic firms, integration potentially relaxes the market size constraint, allowing producers to move down their cost curves and thus enhance competitiveness. Secondly, small domestic market sizes tend to limit the number of firms that can profitably/optimally operate in the domestic market, and thus tend to cultivate monopolies/oligopolies ... A RIA can mitigate the inefficiencies associated with the monopolization of domestic markets by opening up these markets to competition, at least

<sup>145</sup> G Soros 'The Costs of Merkel's Surrender to Hungarian and Polish Extortion' *Project Syndicate* (10 December 2020), accessed at [https://www.project-syndicate.org/commentary/merkel-surrenders-europe-to-hungary-poland-extortion-by-george-soros-2020-12?utm\\_](https://www.project-syndicate.org/commentary/merkel-surrenders-europe-to-hungary-poland-extortion-by-george-soros-2020-12?utm_)

<sup>146</sup> S Roberts, T Vilakazi & W Simbanegavi 'Competition, Regional Integration and Inclusive Growth in Africa: A Research Agenda' in J Klaaren, S Roberts & I Valodia (eds) *Competition Law and Economic Regulation: Addressing Market Power in Southern Africa* (2019) 263.

from within the enlarged market. For example, consider three adjacent countries, each with a ‘monopoly’ producer of cement and applying tariffs to protect their domestic markets. With integration, the tariffs will fall away and the enlarged market will now feature rivalry between three firms, likely resulting in improved x-efficiency and allocative efficiency.<sup>147</sup>

The RIAs in Africa may also turn a necessity into a virtue. Foreign investment in Africa writ large has collapsed as a consequence of the COVID-19 pandemic. The United Nations Conference on Trade and Development estimates that FDI flows could contract by as much as 40% in 2020. While the global supply chain may not collapse, foreign investors are less likely to look to this continent in order to shore up individual components of any given global value chain (GVC) in the manufacturing and the transportation sectors. Albert Muchanga, the AU’s commissioner for trade and industry, noted that in this environment, investors are extremely risk averse.<sup>148</sup> However, some of the damage could be offset if African nations themselves drove investment by promoting intra-African trade. The Africa Continental Free Trade Area (AfCFTA) agreement could create a single tariff-free \$3 trillion market. Mr Muchanga asserts that: ‘If Africa is to recover quickly ... it has to undertake trade in value-added products and the best platform for that export diversification is the AfCFTA.’<sup>149</sup>

Moreover, the benefits of RIAs are not limited to the economic realm. Following North, Wallis and Weingast, Roberts, Vilakazi and Simbanegavi suggest that ‘[c]ompetitive markets generate long-term prosperity and allow for dynamism in terms of different social groups and interests, which feeds into politics’, making that realm more inclusive and pluralistic.<sup>150</sup> ‘Conversely’, they write, ‘when competitive markets exist’ within more inclusive, pluralistic polities, ‘distortions, such as ... rent seeking [behavior] ... [should] generate a response from forces in society that [both] recognize[s] the economic costs that are [being] imposed’ upon them and elicits political and legal responses designed to eliminate the increased costs and the behaviour underlying such costs.<sup>151</sup> Of course, political and social responsiveness to abuses of market power is a contingent affair. The kinds of monopolistic practices that lead to the creation of competition/antitrust laws in one gilded age may not lead to a similar politico-legal response in a second gilded age. Social actors may be aware of the economic unfairness imposed upon them and fail to respond collectively in a manner that eliminates the abuse. So it goes. Inclusive political and economic states may rise and then fall back into archaic or novel extractive arrangements. But for the purposes of this book, the bet of all of the aforementioned authors is that greater economic inclusivity will help foster greater political inclusivity, and vice versa. That’s a powerful and attractive argument in favour of South Africa’s membership in an RIA – given its especially long history of extractive political and economic institutions. However, as with Hungary and Poland’s political resistance to abdicating a degree of national sovereignty for abstractions such as the rule of law, it is difficult to imagine those parties who currently benefit from the elitist and extractive political and economic arrangements in contemporary South Africa conceding

<sup>147</sup> *ibid.* at 271.

<sup>148</sup> N Munshi ‘Africa Must Boost Internal Trade to Recover from Covid Slump, AU Says’ *Financial Times* (16 August 2020), accessed at <https://www.ft.com/content/1e94048a-8cc4-4e6e-a2df-5509974e62b1>

<sup>149</sup> *ibid.*

<sup>150</sup> Roberts, Vilakazi & Simbanegavi (above) at 268, citing D North, J Wallis & B Weingast *Violence and Social Orders* (2009) 129.

<sup>151</sup> *ibid.* at 268, citing North, Wallis & Weingast (above) at 129.

control to a multinational authority. What holds for Hungary and Poland must, under current conditions, be said to hold for South Africa.

### *On inclusive global institutions*

The optimism behind the reinvigorated European Union and the potential for a similar set of institutional arrangements in southern Africa should serve as a reminder of the provenance of such multinational organisations. In 1941, as World War II raged, and the Great Depression dragged on, Franklin Delano Roosevelt (along with Winston Churchill) began to ponder what a postwar world might look like, assuming that the forces of European fascism could be beaten back.

His message abroad sounded much like the messages of solidarity and sanctuary that he had proclaimed back home. If the New Deal promised a state that would secure the health, wealth and safety of the American public, then the Atlantic Charter promised agreements with and institutions for other liberal welfare state democracies that would ensure greater ‘social security’ – and protection from worldwide ‘contagions’ like the Great Depression – and enhanced ‘physical security’ – and thus protection from foreign aggression. Although the New Deal could have served as the not so limited horizon for Roosevelt’s imagination, the Atlantic Charter foresaw the need for cooperation between other liberal democracies that would vouchsafe ‘social security’ and ‘physical security’ around the world. As G John Ikenberry writes:

Social security meant building a social safety net. National security meant shaping the external environment: planning ahead, coordinating policies with other states, and fostering alliances. From now on, national governments would need to do much more to accomplish the twin goals of social and national security – both at home and abroad ... Internationalism was not a project of tearing down borders and globalizing the world; it was about managing the growing complexities of economic and security interdependence in the pursuit of national well-being.<sup>152</sup>

Eleanor Roosevelt’s successful efforts to create a United Nations reflects a similar impetus. While some would initially be more equal than others (e.g., the Security Council), the General Assembly, and a truly breathtaking array of other institutions, have given all 193 member states a voice on subjects in which virtually all (somewhat) inclusive polities have an interest.

Given the Cold War and the slow unravelling of colonial projects after World War II, neither NATO nor the United Nations could forestall two dominant fault lines in today’s world. None of the Bretton Woods institutions could prevent the acceleration of economic inequalities between (as well as within) advanced economies and some emerging economies with rather benighted domestic and foreign policies (even as the IMF and World Bank came somewhat belatedly to understand their role in creating such disparities through austerity measures and undertook to replace them with development programmes). Moreover, no one could have anticipated the increased insecurity that various nations now experience on a political playing field in which the bipolar world of US-Soviet relations has been replaced by a fragmented landscape in which covert interference in the domestic affairs of other countries, cyberwarfare, trades wars and outright military conflicts have

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<sup>152</sup> G Ikenberry ‘The Next Liberal Order: The Age of Contagion Demands More Internationalism, Not Less’ *Foreign Affairs* (July/August 2020), accessed at <https://www.foreignaffairs.com/articles/united-states/2020-06-09/next-liberal-order>.

supplanted cooperation. However, that open political and economic orders need one another far more than critics of globalisation would allow, seems glaringly obvious.<sup>153</sup> No more so than today. Despite all the gnashing of teeth, global supply chains have not failed as a result of the pandemic.<sup>154</sup> (Indeed, GVCs constitute the only means of delivering SARS-CoV-2 vaccines other treatment modalities to eight billion people across the world.) There's been no rush to 'reshore' nor any embrace of political policies that would support autarky or inward industrialisation. Let's assume that an autocrat or two, thankfully Trump in January 2021, and perhaps a Bolsonaro or a Modi, can be ushered off the world stage. Then the remnants of these multinational, multilateral<sup>155</sup> and global institutions might be repurposed in a manner that serves the many and not the few.<sup>156</sup>

The alternative should be too grim to contemplate: diminished superpowers carving up the world in a new and even more destructive world order.<sup>157</sup> While it may already be

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<sup>153</sup> B Milanovic 'The World Is Becoming More Equal: Even as Globalization Hurts Middle-Class Westerners' *Foreign Affairs* (28 August 2020), accessed at <https://www.foreignaffairs.com/articles/world/2020-08-28/world-economic-inequality?>

<sup>154</sup> A Swanson & J Tankersley 'The Pandemic Isn't Bringing Back Factory Jobs, at Least Not Yet: It's A Moment of Reckoning for Global Supply Chains. But That Doesn't Mean Companies Are Flocking Back to the United States' *The New York Times* (22 July 2020), accessed at <https://www.nytimes.com/2020/07/22/business/economy/coronavirus-globalization-jobs-supply-chain-china.html>.

<sup>155</sup> For a more modest and pragmatic view of multilateralism, see A Palacio 'Multilateralism in a G-Zero World' *Project Syndicate* (22 June 2020), accessed at [https://www.project-syndicate.org/commentary/us-global-leadership-multilateral-frameworks-by-ana-palacio-2020-06:](https://www.project-syndicate.org/commentary/us-global-leadership-multilateral-frameworks-by-ana-palacio-2020-06)

When effective global leadership eventually reemerges, the world can get to work building a better multilateral system ... underpinned by common interests and a sense of shared responsibility. In the meantime ... we must make do with what is possible: pursuing a multilateralism that takes a more organic, bottom-up approach and makes much better use of coalitions of the willing, public-private partnerships, and civil-society participation.

<sup>156</sup> D Acemoglu 'The Post-COVID State' *Project Syndicate* (5 June 2020), accessed at [https://www.project-syndicate.org/onpoint/four-possible-trajectories-after-covid19-daron-acemoglu-2020-06?utm\\_](https://www.project-syndicate.org/onpoint/four-possible-trajectories-after-covid19-daron-acemoglu-2020-06?utm_). Acemoglu writes:

The New-Old Welfare State ... – 'welfare state 3.0' – could lead toward a brighter horizon. The first iteration of the welfare state emerged from the Great Depression and World War II. In the US, it featured policies such as social security and unemployment insurance, and later received a major upgrade with additional programs such as Medicaid and Medicare (government health insurance for those over 65) in the 1960s. The second version came in the 1980s, following the arrival in power of Ronald Reagan in the US and Margaret Thatcher in the UK and, subsequently, the collapse of the Soviet Union. In many parts of the West, and particularly in the US and the UK, welfare state 2.0 amounted to a downgrade – a weakened, less effective iteration of what had come before, with many old protections, such as trade unions, hollowed out or neutered. To anticipate what could – and should – come next, one should start with an understanding of current needs. Clearly, many advanced economies need a stronger social safety net, better coordination, smarter regulation, more effective government, a significantly improved public-health system, and, in the US case, more reliable and equitable forms of health insurance. Pretty much everyone agrees that governments need to shoulder more responsibility, while also becoming more efficient. It is also safe to assume that the pandemic-era expansion in spending, regulation, liquidity provision, and other interventions will become permanent to some degree (though it will eventually have to include expanded taxation, too) ... As the state grows stronger, so, too, would democratic institutions and mechanisms of political participation adequate to monitoring its actions and holding it accountable.

<sup>157</sup> K Campbell 'China Is Done Biding Its Time: The End of Beijing's Foreign Policy Restraint?' *Foreign Affairs* (15 July 2020), accessed at [https://www.foreignaffairs.com/articles/china/2020-07-15/china-done-biding-its-time?utm\\_](https://www.foreignaffairs.com/articles/china/2020-07-15/china-done-biding-its-time?utm_).

happening,<sup>158</sup> there's a chance that such an eventuality can at least be partly forestalled. We could then reinforce those institutions that serve at least the enlightened self-interest of strong and weak states alike.

We need the United Nations. For example: who would organise information and discussion around climate change, resource scarcity and the movements of millions of people around the world?<sup>159</sup> The UNCC has kept us focused on such problems, and the green political platforms and green economic initiatives (public and private) sprouting up across the world are to a significant extent the product of its persistent messaging. The United Nations Global Compact has created a vocabulary in which more and more firms – along with upward pressure from employees, communities and consumers – take evermore seriously their 'social licence to operate'. As a result of this 20-year effort, more companies are producing publicly disseminated social audits or publicly available environment, sustainability and governance (ESG) reports for their shareholders as well as potential investors. For every Facebook that largely ignores privacy and civility for the bottom line,<sup>160</sup> there's now a Twitter willing to draw a line between the true and the false, and between inclusive messages and divisive messages designed to foment racism, misogyny and bigotry in all their forms. Even Facebook eventually blocked President Trump's account in January 2021, while Apple refused to allow the alt-right social media platform – Parler – to be downloaded from its App Store. The newfound resolve of these platforms to make distinctions between truth and falsehood enhance the ability of nascent constitutional democracies such as South Africa to sculpt new and more inclusive norms, rules and institutions.

Moreover, the South African Constitution itself – from Sections 231 to 233 – has committed the nation to both strengthening these international institutions and abiding by their dictates. As Cheryl Saunders writes:

The expansion of the authority of international or regional orders, at the expense of national constitutions, may be legitimized through association with constitutional principles of some kind. Much of the energy of global constitutionalism is directed to considering the extent to which this can be achieved and how. As matters presently stand, it may be plausible that the

<sup>158</sup> E Sherwood-Randall 'The Age of Strategic Instability: How Novel Technologies Disrupt the Nuclear Balance' *Foreign Affairs* (15 July 2020), accessed at <https://www.foreignaffairs.com/articles/russia-fsu/2020-07-21/age-strategic-instability>; C Gohd 'Russia has Tested an Anti-Satellite Weapon in Space, US Space Command Says' *Space* (23 July 2020), accessed at <https://www.space.com/russia-tests-anti-satellite-weapon-in-space.html>.

<sup>159</sup> A Lustgarten 'The Great Climate Migration' *The New York Times* (23 July 2020), accessed at <https://www.nytimes.com/interactive/2020/07/23/magazine/climate-migration.html>. See also B Badré & Y Tiberghien 'The Pandemic Must End Our Complacency' *Project Syndicate* (18 June 2020), accessed at <https://www.project-syndicate.org/commentary/covid19-pandemic-crisis-of-globalization-international-leadership-by-bertrand-badre-and-yves-tiberghien-1-2020-06>. While the authors argue that 'an economic downturn as severe as the Great Depression and political conditions similar to those in the run-up to World War I ... needs effective collective leadership', they provide no guidance as to how 200 nations – 130 of which are autocratic, 50 are flawed democracies and a mere 20 are full democracies – would go about creating the institutions required to provide such rationale management of the planet.

<sup>160</sup> It should come as little surprise that as soon as the end of Trump's presidency was a *fait accompli* on 9 December 2020, the Federal Trade Commission and attorney generals in 46 of 50 US states launched antitrust suits against Facebook – in part due to what their ownership of WhatsApp and Instagram has meant for their anti-competitive market share.

international sphere could gradually consolidate a form of the rule of law, observe a form of separation of powers and acknowledge the primacy of human rights.<sup>161</sup>

The advent of such an ostensibly limited international order should be heartily welcomed by our own Constitutional Court<sup>162</sup> – even as it struggles to ensure that actors in the domestic realm abide by such dictates. The bet, as with Regional Integration Agreements, would be that global constitutional institutions would strengthen the hand of domestic players committed to inclusive political institutions that adhere to the rule of law, the separation of powers and fundamental rights.

Of course, doubling down on institutions that enable open societies to find one another, or to cooperate with other aspirant open societies, is not the only option. As we have already seen, China's Silk Road and Belt Initiative (RBI) has proven just as enticing to the 70-odd states that have signed on in one respect or another.<sup>163</sup> The RBI's rapid development opportunities and China's evident economic success<sup>164</sup> appear to be worth the price of China's top-down management of projects and the rather bracing incursions on national sovereignty that may flow from the failure to repay one's debts timeously.<sup>165</sup> For emerging economies and less-than-open societies, China's global normative order<sup>166</sup> may

<sup>161</sup> C Saunders 'Global Constitutionalism: Myth and Reality' in J Varuhas & S Stark (eds) *The Frontiers of Public Law* (2020) 19, 21.

<sup>162</sup> L Chenwi & F Sucker 'South Africa's Competing Obligations in Relation to International Crimes' (2015) 7 *Constitutional Court Review* 199, accessed at <http://www.saflii.org/za/journals/CCR/2018/9.pdf>.

<sup>163</sup> D Acemoglu 'The Post-COVID State' *Project Syndicate* (Jun 5, 2020), accessed at [https://www.projectsyndicate.org/onpoint/four-possible-trajectories-after-covid19-daron-acemoglu-2020-06?utm\\_](https://www.projectsyndicate.org/onpoint/four-possible-trajectories-after-covid19-daron-acemoglu-2020-06?utm_):

The second possible path is 'China-lite,' which has become increasingly likely for the 'Hobbesian' moment we are now living through ... In times of deep uncertainty, when there is a need for high-level coordination and leadership, many people's first instinct is to turn once again to Hobbesian solutions.

<sup>164</sup> D Rodrik 'China as Economic Bogyman' *Project Syndicate* (9 July 2020), accessed at <https://www.project-syndicate.org/commentary/west-should-stop-criticizing-china-industrial-policy-by-dani-rodrik-2020-07>.

There is now broad political agreement in the US political spectrum that the country needs a more explicit industrial policy targeting good jobs, innovation and a green economy advanced by the US Senate's top Democrat, Chuck Schumer, proposes to spend \$100 billion over the next five years on new technologies. Much of the new push for industrial policy in the US and Europe is motivated by the perceived Chinese 'threat'. But economic considerations suggest this is the wrong focus. The needs and remedies lie in the domestic sphere. The objective should be to build more productive, more inclusive economies at home – not simply to outcompete China or try to undercut its economic progress.

<sup>165</sup> J Chaisse & M Matsushita 'China's "Belt and Road" Initiative: Mapping the World Trade Normative and Strategic Implications' (2018) 52 *Journal of World Trade* 163, accessed at <https://www.semanticscholar.org/paper/China%27s-%27Belt-and-Road%27-Initiative-Mapping-the-and-Chaisse-Matsushita/>.

<sup>166</sup> R Mitter 'The Everlasting Mao' *Project Syndicate* (23 October 2020), accessed at <https://www.project-syndicate.org/onpoint/maoism-in-contemporary-china-and-the-world-by-rana-mitter-2020-10?barrier>:

In [one] version of events, the Communist Party of China (CPC) ruled through economic legitimacy: it would survive as long as it presided over an economy that ensured rising living standards, but it would inevitably fail if rapid economic growth disappeared. In reality, Mao never really went away. Even if his reputation has dipped at times, he has remained an object of fascination and veneration for large swaths of Chinese society. And in the era of Xi Jinping, there is constant internal debate over whether Xi is the new Mao ... Still, the underlying anger that had made Mao's ideas so popular in the first place did not disappear. And it is here that Blanchette identifies the real reason for the central leadership's anxiety about neo-Maoist currents. While there have always been liberal trends in Chinese society, they have seeped into the popular mood only rarely (such as in the early 1980s, perhaps). But nationalism is different. By drawing on the shared memory of the state's founder, neo-Maoism is far more potent

prove more attractive than participation in the well-worn (or worn-out) Bretton Woods institutions even as China has started to stagnate and its Belt and Road Initiative has begun to falter. That may remain so (for both historical and ideological reasons)<sup>167</sup> even if, as it would appear, those institutions have finally learned that offering liberalisation without liberation is no longer a desirable development model.<sup>168</sup> Given the current moment's inflection point, it's absolutely impossible to say whether wholesale changes in the 'North Atlantic' vision of a global constitutional order will prove preferable to the global order on offer from Beijing.<sup>169</sup>

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than any liberal strain of thought, particularly when it offers a channel through which to indict the values of the current party-state ... *Ultimately, though, the version of Maoism pushed by Utopia and its adherents is a fantasy. While longing for a world underpinned by shared values, collectivism, and austere altruism, it ignores many of the key values underpinning Maoism, not least the celebration of violence as a transformative force.* (Emphasis added)

<sup>167</sup> E Colby & R Kaplan 'The Ideology Delusion: America's Competition with China is Not About Doctrine' *Foreign Affairs* (4 September 2020), accessed at <https://www.foreignaffairs.com/articles/united-states/2020-09-04/ideology-delusion?>

China may ultimately present a stronger ideological challenge than the Soviet Union did ... [I]t fusion of authoritarian capitalism and digital surveillance may prove more durable and attractive than Marxism.' But the authors contend that given the 'very scale of China's economy, population, and landmass and its consequent power would cause profound concern for U.S. policymakers even if the country were a democracy. Seeing this competition as primarily ideological will misconstrue its nature – with potentially catastrophic results.

<sup>168</sup> R Mitter 'The World China Wants: How Power Will – and Won't – Reshape Chinese Ambitions' *Foreign Affairs* (January/February 2021), accessed at [https://www.foreignaffairs.com/articles/china/2020-12-08/world-china-wants:](https://www.foreignaffairs.com/articles/china/2020-12-08/world-china-wants)

Chinese power today is a protean, dynamic force formed by the nexus of authoritarianism, consumerism, global ambitions, and technology. Call it the ACGT model: with the same initials as the nucleotides in DNA, these strands of Chinese power combine and recombine to form China's modern political identity and approach to the rest of the world. The Chinese Communist Party (CCP) wants to firm up its grip on Chinese society, encourage consumerism at home and abroad, expand its global influence, and develop and export China's own advanced technology. China's current standing and future prospects cannot be understood without seeing all four of those goals together ... [Despite its complexity, and the need for a nuanced view of its behaviour], China's global future depends on how it can successfully recombine the other aspects of its ACGT model. At the moment, Chinese authoritarianism threatens to limit Beijing's ability to create a plausible new form of global order.

See also F Zakaria 'The New China Scare: Why America Shouldn't Panic About Its Latest Challenger' *Foreign Affairs* (January/February 2020), accessed at [https://www.foreignaffairs.com/articles/china/2019-12-06/new-china-scare?utm\\_](https://www.foreignaffairs.com/articles/china/2019-12-06/new-china-scare?utm_).

<sup>169</sup> L Zucca, 'Two Conceptions of Global Constitutional Order' (2018) *King's College London Law School Research Paper No 2018-22*, accessed at <https://ssrn.com/abstract=3188161>.

# EPILOGUE

## Doubling Down

### *The Hollow Men*

T.S. Eliot (1925)

Mistah Kurtz – he dead.  
A penny for the Old Guy

I

We are the hollow men  
We are the stuffed men  
Leaning together  
Headpiece filled with straw. Alas!  
Our dried voices, when  
We whisper together  
Are quiet and meaningless  
As wind in dry grass  
or rats' feet over broken glass  
In our dry cellar

Shape without form, shade without colour,  
Paralysed force, gesture without motion;

Those who have crossed  
With direct eyes, to death's other kingdom  
Remember us - if at all - not as lost  
Violent souls, but only  
As the hollow men  
The stuffed men.

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V

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This is the way the world ends  
This is the way the world ends  
This is the way the world ends  
Not with a bang but with a whimper.

## A. On Icebergs: Wicked Problems, State Failure and Global Collapse

I am an American, New York born.<sup>1</sup>

By birthright and timing, I should be and have been an optimist when it comes to the possibilities of solving social problems, mainly through politics and, subsequently, through policy and law. I grew up during a time of great expectations. Subsequent to my participation in the one million person June 12, 1982 Rally for Nuclear Disarmament in New York, I then bore witness to significant reductions in nuclear weapons within the next few years.<sup>2</sup> During that decade, we would march for equal educational funding, women's rights, racial justice and divestment from South Africa – and then observe strong seismic political changes in the world around us. In 1990, one could legitimately hope that the coincidence of David Dinkins' election (as the first African-American mayor of New York) and Nelson Mandela's release from prison marked at least one branch of history bending toward justice.

Over two-and-half decades later, as a long-time resident of South Africa, I began to have serious doubts about the 'projects' of nation-building, reconciliation and economic transformation undertaken in late 2000s and early 2010s.<sup>3</sup> The #FeesMustFall movement of 2015/2016 constituted a truly noble cause. However, that this movement fell prey to an array of distortions and inversions of power at one South Africa's finest universities only confirmed my concerns about South African politics writ large.

Up until then, I had stayed in my legal-social-science academic lane, which remained relatively clear. However, this new period of turmoil forced me off the side of the road. I wasn't really interested in fighting what seemed to me to be the last war.<sup>4</sup> In any case, the war found me. Bloodied? Yes: but still unbowed.

What could I say?

What I could do was write more seriously about South Africa's fundamentals. First, I could address the obvious distinction between law and politics – and the over-valorisation

<sup>1</sup> With thanks to Saul Bellow, for teaching me to 'notice' things.

<sup>2</sup> V Contendi 'The Fight Continues: Reflections on the June 12, 1982 Rally for Nuclear Disarmament' *Arms Control Association* (10 June 2018), accessed at <https://www.armscontrol.org/blog/2018-06-10/fight-continues-reflections-june-12-1982-rally-nuclear-disarmament>:

While there remains some question as to how the first meeting came about or who exactly thought of the idea, most signs point to Cora Weiss. At the time, Weiss was running the disarmament program at Riverside Church. However, like many I have interviewed about the rally, Weiss was quick to point out that it was a collaborative effort. Weiss was asked in October 1982 if nuclear disarmament should be a single issue. 'Impossible is the answer,' she said. 'Life is not a single issue. Survival is not a single issue. And it must be jobs with peace. Not just peace alone.' I recently asked the same question to Leslie Cagan. She responded: 'My politics were always then and I still believe, that whenever there was an opportunity to see the connections between issues and to bring people from different struggles together that was a good thing ... Nuclear weapons are part of the military arsenal, so for me, it was a no-brainer that we should be connecting these issues.'

<sup>3</sup> R Ballard 'Social Cohesion in South Africa' in Gauteng City-Region Observatory *Social Cohesion in Gauteng* (2019) 19–20, accessed at [https://www.gcro.ac.za/m/documents/2019-03-28\\_Social\\_Cohesion](https://www.gcro.ac.za/m/documents/2019-03-28_Social_Cohesion).

<sup>4</sup> I have, throughout this book, attempted to recognise the shortcomings of the last war – the 1994 and 1996 constitutional settlements – and the merits of some of arguments that close friends and colleagues adopt toward our peace settlements. Again, the problem is not the words found in those two capacious constitutions, so much as the failure of our politics (and our social intercourse) to give them a more egalitarian reading in the ensuing 26 years.

of the Constitution as the lever by which the reconstruction and the development of this country could take place. Second, I could then, having separated the two disciplines, fix my gaze upon three different, but interrelated accounts of problems of collective action. These problems of collective action have prevented South Africa's post-1994 (formally) democratic state and society from addressing long-standing structural impediments that have prevented the majority of South Africans from securing that basket of material and immaterial entitlements that would enable each person to pursue their own comprehensive vision of the good (as they understand them). Again, whether you frame the analysis of our political economy in terms of Sen's development theory, Dorf and Sunstein's experimentalism, Thaler, Banerjee and Duflo's behavioural economics, Acemoglu and Robinson's recipe for inclusive political and economic institutions or Olsen's conditions for a strong state that produces necessary basic public goods, South Africa comes up short.

But there's coming up short and then there's really coming up short. As I noted in Chapter III, Peter Turchin sets out a three-part rubric for the conditions under which democracies can be expected to fail:

a bloated elite class, with too few elite jobs to go around; declining living standards among the general population [and] a government that can't cover its financial positions.<sup>5</sup>

Whereas the Biden Administration of 2021 offers the United States the ability to govern with the Democratic Party's control of the White House, the House of Representatives and the Senate, it's hard to see how the Ramaphosa regime can offer South Africa the same. Ramaphosa won the party and popular election by the slimmest of margins and the slimmest of hopes that he could turn the country around. At the end of 2020, he presides over a nation with too few desirable and well-remunerated jobs for the competing black, white, Indian and coloured elites who would occupy them – especially given his poor stewardship over an economy already sinking before it ran straight into the COVID-19 pandemic. Living standards have declined precipitously – with some 50% of South Africans having fallen below the food poverty line of \$5/day during 2020. Finally, we have a government presiding over a sovereign debt ratio closing in on 83%; multiple SOEs that are in business rescue or are saddled with such large amounts of debt that the government can only cover the interest on these debts; and an austerity public sector wage budget that threatens to put South African economy into the same steep deceleration experienced by much more advanced economies such as India. Less money circulates, more businesses fail, and less revenue finds its way into the fiscus – at which point – more core public services and public sector salaries must be cut. At the same time, the private sector firms reliant upon direct contracts with the government or indirect sales from state tenders also feel the squeeze and the need to trim their sails. So it goes.<sup>6</sup> You don't have to buy Turchin's iron laws of history to conclude that South Africa has hit the iceberg – after years of the consolidation of new and old elites, the graft of grifters like the Guptas and Bell Pottinger, the debts no honest man can repay, and a majority of the country living on the margin. As Turchin not so wryly remarks: 'If you have a discussion among the crew about which

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<sup>5</sup> G Wood 'The Next Decade Could Be Even Worse: A Historian Believes He Has Discovered Iron Laws That Predict the Rise and Fall of Societies: He Has Bad News' *The Atlantic* (November 2020), accessed at <https://www.theatlantic.com/magazine/archive/2020/12/can-history-predict-future/616993/>

<sup>6</sup> Better to lose a few shekels, than your job and all your shekels. Not everyone, as this book has made clear, can count themselves so lucky.

way to turn, you will not turn in time, and you hit the iceberg directly.<sup>7</sup> Over the last 25 years South Africa has been one long discussion – held primarily within one party, the African National Congress – without a constructive resolution. As Graeme Wood writes: ‘That sickening crunch you now hear – steel twisting, rivets popping – is the sound of the ship hitting the iceberg.’<sup>8</sup>

Joseph Tainter proffers a similar, if broader, account on the causes of state failure in *The Collapse of Complex Societies*.<sup>9</sup> Complex societies differ from simple societies to the extent that they are radically heterogeneous, possess a rather high degree of specialisation and rely upon a strong centralised government capable of producing a basket of basic public goods for all of its citizens, while maintaining order amongst a wide array of competing (or at least not especially cooperative) social institutions, organisations, communities and networks. When they work at optimal capacity, as I argued in *The Selfless Constitution*, such polities function as problem-solving entities that generate increasing amounts of benefits for their citizens through a commitment to trial and error, feedback mechanisms and reflexivity in most, though not all, political, social and economic institutions. This commitment to both experimentalism and flourishing allows citizens, their representatives, and every other social and economic institution imaginable to share what they know with others in a manner that enables individuals, organisations, communities, sub-publics and the larger polity to continue to solve new problems and generate ever greater benefits for themselves and other members of the polity that they co-inhabit.

Collapse occurs when the central government is weakened through internecine conflicts, competition for increasingly scarce goods and the breakdown of institutions designed to produce public goods and to mediate effectively disputes between its fairly heterogeneous array of associations, communities and sub-publics. While South Africa certainly fits these indicia of collapse, both the United Kingdom and the United States have likewise witnessed difficulty in resolving crises – such as the COVID-19 pandemic and the concomitant economic fallout – or to resolve more mundane political disputes through democratic institutions.<sup>10</sup> These two older, well-established democracies are hardly exceptional. Since

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<sup>7</sup> *ibid.*

<sup>8</sup> *ibid.*

<sup>9</sup> *The Collapse of Complex Societies* (1988). Tainter’s narrative shares another strong family resemblance with Acemoglu and Robinson’s analysis. Unless we are looking solely at polities that have collapsed and disappeared, then nations do not, necessarily, occupy fixed positions as either complex or simple, or inclusive or extractive. While most nations have been or remain predominantly simple and extractive, those nations that have made the jump to complexity and inclusivity may regress, only to once again become more complex and inclusive. Why such nations experience progress in such fits and starts is a highly contingent affair for which neither Acemoglu and Robinson nor Tainter offer particularly dense explanations. Beyond basic baselines for satisfying the desiderata of complexity and inclusivity, both sets of explanations fall into the ‘I know it when I see it’ kind of theory.

<sup>10</sup> As I noted in Chapter II, both the United States and the United Kingdom rendered themselves virtually ungovernable at the federal level for much of the last decade. One can imagine Scotland, Northern Ireland and even Wales leaving the United Kingdom under current post-Brexit conditions and opting to retain a strong relationship with the European Union. D Birrell & A Gray ‘Devolution: The Social, Political and Policy Implications of Brexit for Scotland, Wales and Northern Ireland’ (2017) 46 *Journal of Social Policy* 765, accessed at <https://doi.org/10.1017/S0047279417000393>. A deeply split federal government made the passage of major legislation virtually impossible since the rise of Tea Party Movement within the Republican Party in 2010. The centrist-orientation of the Democratic Party over the last decade – and a largely moribund left wing until the insurgent campaign of socialist Senator Bernie Sanders – did not leave

the fall of the Berlin Wall in 1989, to use a handy reference point, we have witnessed the demise of empires, the disintegration of nation-states and civil wars that have led to both genocide and political vacuums where no central government exists at all.<sup>11</sup>

What makes Tainter's observations interesting for the purposes of this book is his rather prescient observation that collapse is no longer limited to individual nations, but could, given our interconnectedness, occur on a global scale. That observation is consistent with the basic premise of this book: that we lack the necessary centralisation of political, social and economic authority – internationally and globally – to solve the broad array of wicked problems that confront humanity as a whole. At the moment, no such institutions exist – nor are we even close. We address issues of grave importance in a scatter-shot manner at best. So, if Turchin's ship goes down, then we are all likely to go down together.<sup>12</sup>

That looks to be increasingly true for both nuclear warfare and climate change. And let's say we do have 10 vaccines for SARS-CoV-2 by the middle of 2021, despite the problems created by variants that evade the antibodies produced by them. In a feat never before accomplished by humanity, we still need to deliver a very necessary public good to almost eight billion people over the next few years. As Martin Luther King stated half a century ago: 'Injustice anywhere is a threat to justice everywhere. We are caught in an inescapable network of mutuality, tied in a single garment of destiny. Whatever affects one directly, affects all indirectly.' Even if we find one another now, will we be able to respond with the same alacrity in the future to the next pandemic, knowing the high economic price that we have already paid and will continue to pay for our halting efforts to stem the transmission of this virus? Will advances in science keep pace with the increasingly lethal nature of easily communicable pathogens? Will we alter our persistent incursions into animal habitats that we already know to be the source of zoonotic viruses? The answer to the first question – only if we really prepare and don't discount the possibility that a similar or more destructive event will occur in the near future. The answer to the second question – highly unlikely, given the value of the natural resources or commodities that can be extracted from these untamed environments. Let's also imagine that I'm wrong about the extent to which AI and other forms of automation will result in significant losses of employment, or the diminishment of the human labour component of existing tasks, amongst those

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it in a position to govern until the elections of 2020. T Engelhardt 'The US Is a Failed State' *The Nation* (10 September 2020), accessed at <https://www.thenation.com/article/world/trump-usa-election/>. The election of President Joseph Biden and Democratic control of the House and the Senate should put the party in a position to reverse the United States' course with respect to both domestic issues and foreign relations. But it won't be easy.

<sup>11</sup> The term 'failed state' is decidedly unpopular in the academic literature. But that seems to be a function of the states commonly described as failures, their 'invidious' locations in the developing world and the use of the term to justify a decidedly failed strategy of US and European interventions in nations around the world with the promise of delivering more 'democratic' arrangements. M Mazaar 'The Rise and Fall of the Failed-State Paradigm: Requiem for a Decade of Distraction' (2014) 93 *Foreign Affairs* 113, accessed at <https://heinonline.org/HOL/LandingPage?handle=hein.journals/fora93&div>; M Bøås & K Jennings 'Insecurity and Development: The Rhetoric of the "Failed State"' (2005) 17 *The European Journal of Development Research* 385, accessed at <https://doi.org/10.1080/09578810500209148>; J Hill 'Beyond the Other? A Postcolonial Critique of the Failed State Thesis' (2005) 3 *African Identities* 139, accessed at <https://doi.org/10.1080/14725840500235381>. Now that 'the chickens have come home to roost' in the US and the UK, it seems perfectly appropriate to view these crumbling empires through the same kaleidoscopic lens.

<sup>12</sup> As Kurt Vonnegut's most famous line in his most famous work – *Slaughterhouse Five* – reads: 'So it goes.'

who actually engage in meaningful and reasonably remunerative employment (defined as those who enjoy a middle-class existence or better – and thus maybe half of humanity). Little about what the tech optimists say about the manner in which AI will augment the work of the top half speaks to extent to which this fourth industrial revolution has created an absence of employment opportunities for the billions of people who live in conditions of extreme poverty, or food poverty, or the penury of the working class or working poor. How happy are we to consign so many people to an existence of basic income grants or schemes – assuming that we can reach domestic agreements about the necessity of such redistributive arrangements? That last question raises several others. How will we, South Africans, make good on Acemoglu and Robinson’s characterisation of the inclusive political and economic institutions to which we aspire and escape the extractive, autocratic and elitist political and economic institutions which dominate our lives? Given that such extractive, autocratic and elitist institutions have been the norm for all but a tiny fraction of human history, and that they continue to dominate the South African landscape today, how will we and 90% of the rest of a world filled with autocracies and deeply flawed democracies avoid Turchin and Tainter’s iceberg? Why should we expect most countries, with autocratic regimes, or deeply flawed democracies with largely elitist arrangements, to engage one another on anything more than a transactional basis? The question is more than rhetorical. The actual solution to all of the wicked problems addressed in this work require collective action on a global scale. But, to bang the point home, we are asked do so without the existence of inclusive, relatively democratic global institutions that possess both the coercive power and the mechanisms necessary to secure the requisite degree of cooperation.

*Small wins, in a world of wicked problems, are simply not good enough:* yet that’s how most readers of this book tend to think and to operate. Recall our incapacity to understand how COVID-19 cases increase during a severe wave: most of us think cumulatively and reflexively tack on the previous day’s tally or double it (if told of a rise in infections), when in fact the infection rates during surges tend to increase exponentially without adequate health care and enforceable guidelines.<sup>13</sup> That’s the rate at which wicked problems accelerate and proliferate. (Similarly, most people think vaccines prevent infection, when they actually enable the body’s immune system to fight off the infection and the disease.) Amazon, however, understood the exponential growth of the virus and the clear opportunity it offered to accelerate its extant business model. Amazon’s ability to follow the science led to the incredibly insightful strategy to hire over 427 300 new employees over the now year-long course of the pandemic (as of late December 2020).<sup>14</sup> With a

<sup>13</sup> For example, as South Africa and South Africans continue to ignore the COVID-19 pandemic and live it up at Level 1, the Western Cape experienced a 52% increase (in reported cases, not actual cases) in mid-November 2020. T Petersen ‘Resurgence of Covid-19 in Western Cape after 52.1% increase in new cases in a week – Winde’ *News24* (25 November 2020), accessed at <https://www.news24.com/news24/southafrica/news/resurgence-of-covid-19-in-western-cape-after-521-increase-in-new-cases-in-a-week-winde-20201125>. For example, Western Cape Premier Alan Winde pressed for the reopening of the economy over the December 2020 holidays, given the dependence of the Western Cape on tourism. His response reflected more magical thinking and led to an increase in the transmission of SARS-CoV-2 through the end of December 2020.

<sup>14</sup> K Weise ‘Pushed by Pandemic, Amazon Goes on a Hiring Spree Without Equal: The Company Has Added 427,300 Employees in 10 Months, Bringing Its Global Work Force to More Than 1.2 Million’ *The New York Times* (27 November 2020), accessed at <https://www.nytimes.com/2020/11/27/technology/pushed-by-pandemic-amazon-goes-on-a-hiring-spree-without-equal.html>.

current worldwide workforce of 1.2 million, it has – not quite single-handedly – altered the way business is done. In the United States, 40% of all retail purchases occurred online in November 2020, as Amazon’s direct competitors and its suppliers quickly stepped into line.<sup>15</sup> Ignore, if you like, the fact that Amazon alone employs over one-eighth the number of workers to be found in the entire South African economy (9 548 000).<sup>16</sup> Unfortunately, the displacement effects for labour (from brick and mortar retail down to suppliers) are quite real. Worse still, the reinstatement effects for labour are not entirely non-existent: Amazon employees (amongst others in the gig economy) are threatening to strike over wages and the conditions of employment.<sup>17</sup> A lot depends upon whether the state begins to side with labour and to re-establish some degree of equilibrium between labour, capital and innovation. The effects of such shifts are global in nature. As the McKinsey & Co chart demonstrated in Chapter III, over 80% of South Africans have moved to online or mobile banking, reducing, as we saw, the need for bank branches and their employees – *without the reskilling or the reinstatement of those displaced*. The same problem of exponential acceleration – and our global failure to respond adequately – recurs with respect to climate change. As the analysis in Chapter II reflects, the COVID-19 pandemic, as well as entrenched interests in carbon-based energy production, has slowed international and domestic efforts to pump the brakes on climate change and natural resource scarcity – even as the price point for solar and wind production have, in most places, fallen below that of coal. In South Africa, while the window for private energy production opened ever so slightly at the end of 2020, our commitment to Eskom’s ongoing existence means that we will continue to contribute to global warming, while enjoying clean coal and dirty air.<sup>18</sup>

<sup>15</sup> F Foer ‘The Monster Publishing Merger Is About Amazon.’ *The Atlantic* (25 November 2020), accessed at <https://www.theatlantic.com/ideas/archive/2020/11/penguin-random-house-simon-schuster-monster-about-amazon/617209/>; A Alter & E Lee ‘Penguin Random House to Buy Simon & Schuster’ *The New York Times* (25 November 2020), accessed at <https://www.nytimes.com/2020/11/25/books/simon-schuster-penguin-random-house.html>. The merger, which results in a 33% share of the book and related media market, reflects a direct response to Amazon’s 49% share of books sales – from Kindle versions to hardcovers to third party resales. Short of a restructuring of the ecommerce market on legitimate anti-trust (anti-competition) grounds – which will not occur during the current pandemic – such consolidation will continue. And such mergers rarely redound to the benefit of employees.

<sup>16</sup> ‘South African Employment Figures’ *Trading Economics* (27 November 2020), accessed at <https://tradingeconomics.com/south-africa/employment-rate>.

<sup>17</sup> A Thomson, M Day & Bloomberg News ‘Thousands of Amazon Workers Will Walk Off the Job Today [Black Friday] To Fight for Fair Pay and COVID Protections’ *Fortune* (27 November 2020), accessed at <https://fortune.com/2020/11/27/amazon-workers-protests-black-friday-covid19/>. Amazon’s response? \$500 million in bonuses. H Ziady ‘Amazon Spends Another \$500 Million on Bonuses. Some of Its Workers Are Still Going on Strike’ *CNN Business News* (27 November 2020), accessed at <https://www.cnn.com/2020/11/27/tech/amazon-global-bonus-germany-strike/index.html>. For a sense of perspective, South African’s entire COVID-19 economic rescue and relief package in 2020 totalled roughly \$50 billion (in terms of purchasing price parity) – much of it unspent and misdirected. For Amazon, \$500 million was just another bonus designed to placate employees who have become essential, frontline workers, not by choice but by necessity. More than likely they will have to wait for state intervention. For example, the US Federal Trade Commission and 46 state Attorneys-General from 46 states are looking to breakup Facebook (WhatsApp and Instagram). Amazon provides a similar, but more intimidating target.

<sup>18</sup> B Ackerman & W Hassler *Clean Coal/Dirty Air: Or How the Clean Air Act Became a Multibillion-Dollar Bail-Out for High-Sulfur Coal Producers* (1981). Bruce Ackerman and William Hassler’s pioneering work demonstrates how the best of intentioned regulatory frameworks can have truly perverse outcomes. That’s not a reason not to ‘do the best that we can’, but given the large number of players who have no interest in

As for the generic cooperation required to engage wicked problems, once again, nuclear proliferation and the recent warmongering between religious fundamentalist states in the Middle East<sup>19</sup> and Asia<sup>20</sup> complicates and confounds multilateral and multinational efforts to address a panoply of other wicked problems (already listed too many times to further recount).<sup>21</sup> As for the generic deterioration of political relationships required to resolve wicked problems, each of the discrete examples of cage rattling mentioned directly above (over permanent technological unemployment, climate change and nuclear proliferation) occurred within a mere three-day window of one another in December of 2020. Again, that compressed account of one week's top stories hardly reflects a world ready to roll up eight billion collective sleeves in order to resolve the existential crises that we currently confront. Tick-tock says the Doomsday Clock.

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going green and stopping the production of carbon-emitting fuel, the path to a carbon neutral environment will not be simple.

- <sup>19</sup> D Sanger, E Schmitt, F Fassihi & R Bergman 'Gunmen Assassinate Iran's Top Nuclear Scientist in Ambush, Provoking New Crisis' *The New York Times* (27 November 2020), accessed at <https://www.nytimes.com/2020/11/27/world/middleeast/iran-nuclear-scientist-killed.html?action=click&module=Top%20Stories&pgtype=Homepage>.
- <sup>20</sup> 'Narendra Modi Threatens to Turn India into a One-Party State' *The Economist* (28 November 2020), accessed at [https://www.economist.com/briefing/2020/11/28/narendra-modi-threatens-to-turn-india-into-a-one-party-state?utm\\_](https://www.economist.com/briefing/2020/11/28/narendra-modi-threatens-to-turn-india-into-a-one-party-state?utm_). In order to entrench his autocratic-nationalism, Modi has engaged in direct military conflict with two nuclear powers – China to the north and Pakistan to the west.
- <sup>21</sup> But here they are anyway, just in case Chapter II feels too far away: (1) nuclear proliferation, (2) climate change; (3) natural resource scarcity; (4) pandemics; (5) the alteration of inclusive political and economic institutions – in the minority of nations that count as full democracies or flawed democracies (70 of 200 states) – into extractive and elitist institutions; (6) the manner in which artificial intelligence, automation and technological disruptions lead to (a) permanent technological unemployment, (b) the manner in which social media undermines the capacity to have meaningful engagement (about facts, and thus social issues) within nations and between nations, (c) the demise of privacy and disturbing increases in the extent of public surveillance of individuals and communities by states, (d) the use of such technology to conduct cyberwarfare between nations or to undermine elections; (7) the fragmentation of the nation state over the last fifty years so it can no longer discharge (a) its ostensible purpose of providing basic public goods; or (b) its original purpose of mediating civil strife under the rule of law or (c) its responsibility to contain non-state actors that undermine national sovereignty or distort their purpose (in what are relatively weak states); (d) control the exercise of private power, especially by companies that possess so much pecuniary power that they can operate outside the lines of the various countries within which they operate; (8) the fragmentation of multinational institutions designed to promote collaboration and diminish conflict – and the demise of rule-governed systems intended to mediate international engagement themselves; (9) a pandemic and new business model induced reversal in prior declining levels of inequality and extreme poverty and (10) the cause-and-effect nature of many of the aforementioned problems on the deepening of autocratic rule in countries that have never known anything but autocracy and the rise of autocratic rule in countries with some experience of democratic rule.

## B. On the Possibility of South African State Failure: How Exogenous Wicked Problems Render Our Endogenous Problems of Collective Action Impossible to Resolve

### *Dry run*

With respect to climate change, we've had ample notice that our wells would run dry in the 2020s.<sup>22</sup> Instead of preparing for the worst, we have allowed two provinces to run dry and a third to resort to sponge baths and flirt with Day Zero.<sup>23</sup> The migrations have already begun.<sup>24</sup> We know how much fixing some broken pipes, dams and water distribution systems might cost. But, as we've seen, years of malign neglect and a bankrupt fiscus mean that not a single concrete solution is currently on offer. We have exactly *one* highly speculative, completely theoretical intervention that could save one city – Cape Town.

Just as this book went to bed at the end of December 2020, a number of local climate scientists postulated that we might reduce the risk of a Day Zero in Cape Town by up to 90% through a Stratospheric Aerosol Intervention (SAI) – one form of Solar Radiation Management (SRM). This particular SAI requires the pumping of clouds of sulphur dioxide particles high into the atmosphere above Cape Town in order to manipulate the city's climate (artificially) so that it returns to normal levels of rainfall.<sup>25</sup> This form of environmental manipulation sounds promising – and shares a family resemblance to the oceanic iron seeding described in Chapter II (another major feat of untested SRM geoengineering). Use of SAI – even theoretically – comes with several major caveats. The SAI experts who proposed this solution, end with a final warning: '[Different] SAI deployment experiments, or [analysis of] a different location might lead to different conclusions.' What experiments and conclusions? In short, this intrepid bunch of geoengineers concede that the alteration of Cape Town's climate could have adverse meteorological effects in other parts of South Africa and other parts of southern and western Africa. Moreover, they cannot be certain as to how an SAI in Cape Town would interact with SAIs elsewhere in the country, on the continent or around the world. The possibility of significant negative unintended consequences cannot be discounted. Finally, the study recognised that the new normal of anthropogenic climate change had us locked in at 2 °C above early 18th century, pre-industrial levels<sup>26</sup> and could not promise rollbacks that would avert the desertification

<sup>22</sup> *US National Intelligence Agency Report* (2007)(above).

<sup>23</sup> While the Western Cape has teetered on the brink of desertification and has done little to ensure natural resource security (a function of benighted leadership and partisan politics), the taps in the Eastern Cape and Limpopo met the criteria for running dry in 2019 and 2020, respectively.

<sup>24</sup> J Podesta 'The Climate Crisis, Migration, and Refugees' *The Brookings Institute* (29 July 2020), accessed at <https://www.brookings.edu/research/the-climate-crisis-migration-and-refugees/>; A Lustgarten 'The Great Climate Migration' *The New York Times* (23 July 2020), accessed at [www.nytimes.com/interactive/2020/07/23/magazine/climate-migration.html](http://www.nytimes.com/interactive/2020/07/23/magazine/climate-migration.html).

<sup>25</sup> R Odoulami, M New, P Wolski, G Guillemet, I Pinto, C Lennard, H Muri & S Tilmes 'Stratospheric Aerosol Geoengineering Could Lower Future Risk of 'Day Zero' Level Droughts in Cape Town' (2020) 15 *Environmental Research Letters* 124007 (18 November 2020), accessed at <https://iopscience.iop.org/article/10.1088/1748-9326/abbf13/pdf>; T Carnie 'Day Zero or Day Sulphur – New Cape Town Study Re-Opens Controversy on Human Manipulation of the World's Climate' *Daily Maverick* (18 November 2020), accessed at [https://www.dailymaverick.co.za/article/2020-11-18-day-zero-or-day-sulphur-new-cape-town-study-re-opens-controversy-on-human-manipulation-of-the-worlds-climate/?utm\\_](https://www.dailymaverick.co.za/article/2020-11-18-day-zero-or-day-sulphur-new-cape-town-study-re-opens-controversy-on-human-manipulation-of-the-worlds-climate/?utm_).

<sup>26</sup> F Otto et al. 'Anthropogenic Influence on the Drivers of the Western Cape Drought 2015–2017' (2018) 13

that had already set in across South Africa, the broader continent and the world, even if universally deployed successfully. That's a whole lot of 'ifs', 'ands' and 'buts' – and both securing universal agreement and funding for a global experiment on this scale quite likely takes us into the Rittel and Webber's 'one-shot territory' since we already have competing SRMs and other geoengineering interventions on the proverbial table.<sup>27</sup>

How much worse will it get? In terms of temperature increase, our country has already blown past the 1.5°C tipping point (it stands at 2.0°C) past which no return may be possible. So has the rest of the world we share: global warming does not recognise sovereign borders. The words of one of the world's leading environmentalists, Bill McKibben should really sound a wake-up call:

Consider what we've seen so far as a baseline: we're definitely not going to get any cooler. But now consider the real problem, the news that scientists have been trying to get across for many years but that has not really sunk in with the public or with political leaders. As Lynas puts it: 'If we stay on the current business-as-usual trajectory, we could see two degrees [Celsius] as soon as the early 2030s, three degrees around mid-century, and four degrees by 2075 or so. If we're unlucky with positive feedbacks ... from thawing permafrost in the Arctic or collapsing tropical rainforests, then we could be in for five or even six degrees by century's end.'<sup>28</sup>

That's a paragraph worth reading again. It's an aggressive reading of the available science (research published in early July estimates we could cross the 1.5°C [worldwide] threshold by 2025), but it's not outlandish. And it implies an unimaginable future. Two degrees will not be twice as bad as one, or three degrees three times as bad. The damage is certain to increase exponentially, not linearly, because the Earth will move past grave tipping points as we rise up this thermometer.<sup>29</sup>

McKibben can be forgiven for seeming 'grim' since he's been writing for almost 30 years, and not nearly enough has happened. Certainly, not here. We carry on – business as usual<sup>30</sup> – using coal-fired plants constructed knowingly on the cheap that regularly leave us in the dark – even as some politicians grudgingly concede that the price for green technology has dropped precipitously and, in principle, ought to be employed.

What seems unforgivable is that *unlike* the frog that doesn't register water slowly being brought to a boil, we've been tracking and watching the effects of such increases in real

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*Environmental Research Letters* 124010, accessed at <https://iopscience.iop.org/article/10.1088/1748-9326/12/4/010>.

<sup>27</sup> Chapter II, when discussing climate change, offers a short list of six candidates currently under 'theoretical' review in the scientific community.

<sup>28</sup> B McKibben '130 Degrees: This is Going to be a Century of Crises, Many of Them More Dangerous than What We're Living through Now' *The New York Review of Books* (20 August 2020), accessed at <https://www.nybooks.com/articles/2020/08/20/climate-emergency-130-degrees/>.

<sup>29</sup> McKibben (20 August 2020).

<sup>30</sup> Central banks and equity funds have recognised the need to pay greater attention to climate change and other pressing social concerns that do not often fall within the control of firms and markets. By demonstrating a willingness to intervene – and at least force corporations to produce an annual Ethics, Governance and Sustainability audit – states have an ability to make the market for public goods upon which our collective existence rides. B Nauman, P Temple-West & K Talman 'Can the US catch up with Europe on ESG?' *The Financial Times* (21 October 2020), accessed at <https://www.ft.com/content/87607bcc-7765-4963-a5f9-1b83f1aab88d>. However, if the timeline for 0% fossil fuel production and use by firms takes us all the way to 2035 – as the EU requires – the real question is whether such a long phaseout will matter for the people that it is meant to serve.

time, and can assess the destructive effects on our own biosphere. South Africa's extractive political and economic institutions and their beneficiaries, however, continue to block meaningful and expeditious progress. Given that 'dramatic climate disruption' is locked in, the only open question is whether mitigation strategies such as SAIs and SRMs enable us to avoid self-immolation.<sup>31</sup>

### *Liar, liar, COVID-19 is still on fire*

For some, perhaps too much ink has been spilled in these pages on the government's mendacity and venality with respect to the COVID-19 pandemic. But as the calendar flips from 2020 to 2021, it's clear that not enough has been said.

After claiming that it would follow the science with respect to preparing for a surge in transmission and opening up the economy only when the data showed that it was safe to do so, our government did neither. When independent epidemiologists and immunologists – along with the South African Medical Research Council – demonstrated that 13 million adults had been infected with SARS-CoV-2, that roughly 40 000 had died from COVID-19 as of late August 2020, that our programme for testing, tracing and isolating was little more than a fiction and that we lacked the doctors and nurses required to treat effectively all in need, the Minister of Health did a better impression of Trump than Trump himself – he fired most of the leading scientists (epidemiologists, immunologists and leading medical practitioners) on his Ministerial Advisory Committee on COVID-19 'out of the blue'.<sup>32</sup> As Professor Francois Venter noted:

It was done with no warning or explanation ... It is not like the epidemic is anywhere [near] over. Government really needs to embrace transparency, and explain jetting in a crowd of WHO experts, an inexplicable curfew, or disbanding an expert panel that didn't rubber stamp decisions made behind closed doors.<sup>33</sup>

It's clear that the steady criticism of government decisions from members of the Ministerial Advisory Committee, over everything from school reopening, to taxi capacity, to the rationales for changing the lockdown levels proved too much for the fragile egos of the coterie of government officials who preferred operating by fiat and without meaningful scientific or political oversight.<sup>34</sup> Having been forced to admit that the official numbers were off by 12 million or so, at least in part because testing had almost completely stopped and attempts to stem transmission had ground to a halt, Health Minister Mkhize had the audacity to claim that the pattern of the pandemic had changed and that it required a fresh approach.

That last claim beggars belief. Not one country in the world in which (a) an initial outbreak of COVID-19 infected somewhere in the region of 25% of the adult population,

<sup>31</sup> J Branch & B Plumer 'Climate Change is Now Locked In: The Next Moves Will Be Crucial' *The New York Times* (22 September 2020), accessed at <https://www.nytimes.com/2020/09/22/climate/climate-change-future.html>.

<sup>32</sup> K Cowan & A Karrim 'Mkhize Disbands Ministerial Advisory Committee on Covid-19 "Out of the Blue"' *News24* (14 September 2020), accessed at <https://www.news24.com/news24/southafrica/investigations/mkhize-disbands-ministerial-advisory-committee-on-covid-19-out-of-the-blue-20200925>.

<sup>33</sup> *ibid.*

<sup>34</sup> K Cowan & A Karrim 'Schools, Taxis and Level 4: MAC Advisories Reveal How Government Sidestepped Scientists' *News24* (28 August 2020), accessed at <https://www.news24.com/news24/southafrica/investigations/schools-taxis-and-level-4-mac-advisories-reveal-how-government-sidestepped-scientists-20200828>.

and (b) no effective restrictions had been taken with regard to social distancing, mask wearing, people's behaviour and commerce, could plausibly claim that a second wave or a third wave of the pandemic should be written off, or that no reinstatement of restrictions might be required. Yet, South Africa did just that as it raced to Level 1, and reopened its skies and borders to international air travel (which, of course, is how COVID-19 seeded itself in the Western Cape in the first place).

And then came the events of October and November 2020, and the incredulous responses from both the President and Minister of Health in early December 2020. First, our second wave appears to have begun in late October 2020. By mid-to-late November 2020, the Eastern Cape hospitals and healthcare system had been overrun, and warranted the appellations 'collapsed or failed'. As Estelle Ellis wrote in November 2020:

The statistics are devastating. In eight months the virus claimed 1,599 lives in the city's hospitals, up to Tuesday night, and another 36 by Wednesday lunchtime – when the provincial command council met. In the city's graveyards the diggers are getting lists to do 10 graves at a time. With every epidemiological report filed by the teams of infectious disease specialists, the warnings became more serious. 'The re-emergence of SARS-Cov-2 was driven by poor compliance with the regulations by the communities, which includes failure to wear masks in the public, lack of social distancing, and routine hand washing or sanitation. The unbanning of liquor sales and opening of the taverns, unsupervised funerals have become public health risks, which may contribute to the spread of the disease. This continues to threaten the public health interventions and reverse the gains, which have already [been] achieved,' the latest missive read ... And at the state hospitals doctors knew that it is now too late for education. 'What you should tell people now,' one said, 'is that we are under-prepared and people will die. We have been warning since October that something is going very wrong here. *Nobody listened*. We watched the cases become more and more. We had to make our own plans, but by now, you know, it was like using two sticks to light a fire. It is too late now. People are bringing their loved ones to the hospital and we go out to find that they are dead already. I don't swab all the dead people to test for Covid-19 – it is too difficult with some of the bodies. Some who come here you can see by their files that they have never been admitted before. They are scared. They are people with nothing. We try to help them but they come too late. We give them oxygen and then we do what we can but you watch how they fight and fight and fight for every bit of air. You see them getting tired and you watch them die ... In July, we had to climb over the dead bodies at Dora Nginza Hospital to get to the oxygen. They only came to help us when it was almost too late. Now they are here again but we have almost finished our battle. They forced us to move to a renovated ward because the minister was coming. We didn't even have phones. We had to buy the nurses airtime. One of the managers lent us one of her extra phones. We are still trying to make a space for us to work. We have no staff so we had to steal from the other units. I don't think we ever planned or expected a pandemic like this. All the neglect of the past at my hospital made the situation critical. *The government should never have started with this thing of Level 1. It confused people. They thought the virus was gone. We want people to put their trust in public health.* People value consistency. We are all connected. That is why this is so hard,' she said.<sup>35</sup>

I have italicised the last part of the quote because it reflects how both frontline healthcare workers and the general populace have responded to a government that raced to Level 1 and

<sup>35</sup> E Ellis 'In the Eye of the Storm: Living in South Africa's Covid-19 Hotspot' *Daily Maverick* (28 November 2020), accessed at [dailymaverick.co.za/article/2020-11-28-in-the-eye-of-the-storm-living-in-south-africas-covid-19-hotspot/](http://dailymaverick.co.za/article/2020-11-28-in-the-eye-of-the-storm-living-in-south-africas-covid-19-hotspot/)

refused to give any meaningful guidance to the general public. After the public humiliation at the hands of the press, regarding the second outbreak in the Eastern and Western Cape, and, in particular, the hideous spike in Nelson Mandela Bay, President Ramaphosa felt obliged to address the nation.<sup>36</sup> After recognising Nelson Mandela Bay as a hotspot, he informed its residents that a curfew would be imposed, travel would be restricted and that liquor sales would occur a *mere* four times a week. The city would remain at Level 1 – as did the rest of the nation. So much for blunting the transmission that has already occurred throughout the rest of the country. He then proceeded to congratulate the government and the people of South Africa for bringing down infection rates after the first surge in August. How the government managed that feat without testing or enforceable social distancing or mask conditions speaks directly to the magical thinking that has informed the government’s response to COVID-19 since March 2020. The most troubling government responses are: firstly, the refusal to put in place restrictions that would stem the transmission of SARS-CoV-2 before either the first wave or the second wave; secondly, the abject failure to educate the public about the nature of the disease, to be honest about what contraction of the illness might mean and to trust citizens to change their behaviour if they were empowered by knowledge; thirdly, to prepare hospitals and clinics adequately, primarily by training nurses to do their jobs correctly; and, fourthly, to make some effort to secure access to vaccines through the new 2020/21 budget – as opposed to doing nothing.<sup>37</sup> Instead, when the numbers of cases got too high, the government stopped testing (forget tracing and isolating) and by moving to Level 1, left everyone with the impression that all was fine. The deflection and the deceit with regard to the greatest global health crisis defies plausible explanation.

Minister of Health, Dr Zweli Mkhize, and the Department of Health then declined to engage publicly the fact of a second wave until the widespread reports of transmission required him to do otherwise. The Minister had to admit that South Africa’s COVID-19 problem was no longer relegated to Nelson Mandela Bay, but that the four usual suspects – the Eastern Cape, the Western Cape, KwaZulu-Natal, and Gauteng – were driving (and had been driving for quite some time) a second wave.<sup>38</sup> He claimed that his department’s analysis was number driven. But without testing and tracing, it’s hard to know how he arrived at a conclusion so readily identified by other members of the medical community a month beforehand.

<sup>36</sup> ‘President Ramaphosa Addresses Nation on COVID19 Pandemic’ *EWN News* (3 December 2020), accessed at <https://ewn.co.za/President-Ramaphosa-addresses-nation-on-COVID-19-pandemic>.

<sup>37</sup> I Kershner ‘How Israel Became a World Leader in Vaccinating Against Covid-19’ *The New York Times* (2 January 2021), accessed at <https://www.nytimes.com/2021/01/01/world/middleeast/israel-coronavirus-vaccines.html>:

An aggressive procurement effort helped set the stage. The health minister, Yuli Edelstein, said in an interview on Friday that Israel had entered into negotiations with drugmakers as an ‘early bird,’ and that the companies were interested in supplying Israel because of its H.M.O.s’ reputation for efficiency and gathering reliable data. ‘We are leading the world race thanks to our early preparations,’ he said.

Here, in an immediate and palpable form, is one of many ways to distinguish technological leaders in the first quadrant, from technological followers in the fourth and last quadrant.

<sup>38</sup> ‘Mkhize Declares Second Wave of Covid-19 in South Africa as New Cases Pass 6,000 in a Day’ *BusinessTech* (09 December 2020), accessed at <https://businesstech.co.za/news/trending/455928/mkhize-declares-second-wave-of-covid-19-in-south-africa-as-new-cases-pass-6000-in-a-day/>.

The government's mismanagement of the vaccine procurement process constitutes its final major failure to discharge its constitutional obligations to protect the right to bodily integrity and the right to health.<sup>39</sup> After doing nothing to secure a vaccine for the entirety of 2020 – save for missing two COVAX down payment deadlines in November and December 2020<sup>40</sup> – the government found itself subject to withering criticism from South Africa's most respected scientists.<sup>41</sup>

Within less than 24 hours, South Africans were treated to the following bizarre spectacle (already captured in detail in the Prologue). First, the chair of his Ministerial Advisory Committee for Covid-19 Vaccination Barry Schoub claimed that vaccines should not be seen as 'a magic wand', behavioural interventions were more important, and South Africa had no chance to compete with wealthy nations for a vaccine.<sup>42</sup> At virtually the exact same moment, Dr Mkhize claimed to be in discussions with four major companies in order to secure enough vaccine for 67% of the population for a rollout at the beginning of February 2021. Within the next few hours, these same pharmaceutical countries flatly contradicted the Minister's pronouncements:<sup>43</sup> (a) Moderna denied that it had entered negotiations with any nation on the African continent;<sup>44</sup> (b) Pfizer stated that it would provide a mere 50 million doses for healthcare workers (25 million people) across the entire continent;<sup>45</sup> and (c) neither Johnson & Johnson nor AstraZeneca confirmed contact with the South African government with regard to vaccine procurement. Worse still, the Deputy Director General of the Ministry Department of Health contradicted Dr Mkhize a few hours later,

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<sup>39</sup> A Dasoo, G Gray, G Richards, M Mendelson, F Abdullah, F Venter, J McIntyre, A Wulfsohn & A van den Heever 'Vaccines for South Africa' *Daily Maverick* (2 January 2021), accessed at <https://www.dailymaverick.co.za/article/2021-01-02-vaccines-for-south-africa-now/>. These scientists describe the frantic cover-up as follows:

Astonishingly, even now, in the full knowledge of what we face and with dozens of countries worldwide, including African nations, embarking on mass vaccination programmes against Covid-19, it is distressing to hear senior officials increasingly talking down the prospects for the availability and usefulness of Covid-19 vaccines in South Africa. This position is, at best, inexplicable ... The unconvincing and defensive exposition of the department's efforts, or to be precise, the lack thereof, deepens suspicions of and perhaps even confirms the absence of a coherent and composite vaccine acquisition strategy.

<sup>40</sup> Five days after the second missed deadline, South Africa coughed up the COVAX down payment – an initiative teetering on the brink of failure.

<sup>41</sup> A Dasoo, G Gray, G Richards, M Mendelson, F Abdullah, F Venter, J McIntyre, A Wulfsohn & A van den Heever 'Vaccines for South Africa' *Daily Maverick* (2 January 2021), accessed at <https://www.dailymaverick.co.za/article/2021-01-02-vaccines-for-south-africa-now/>.

<sup>42</sup> B Schoub 'The Covid-19 Vaccine and the Danger of Creating False Expectations' *Daily Maverick* (3 January 2021), accessed at <https://www.dailymaverick.co.za/article/2021-01-03-the-covid-19-vaccine-and-the-danger-of-creating-false-expectations/>.

<sup>43</sup> N McCain 'Mkhize: Covid-19 vaccine to target two-thirds of the population as govt aims for herd immunity' *News24* (3 January 2021), accessed at <https://www.news24.com/news24/southafrica/news/mkhize-covid-19-vaccine-to-target-two-thirds-of-the-population-as-govt-aims-for-herd-immunity-20210103>.

<sup>44</sup> G York 'COVID-19 Vaccine Supplies for Africa Dwindling as Moderna Opts Out' *The Globe and Mail* (3 January 2021), accessed at <https://www.theglobeandmail.com/world/article-vaccine-supplies-for-africa-dwindling-as-moderna-opts-out/>.

<sup>45</sup> A Sguazzin 'Africa Left with Few Options for Vaccines, as Pfizer Offers to Supply Health Care Workers' *Bloomberg News* (3 January 2021), accessed at <https://www.bloomberg.com/news/articles/2021-01-03/pfizer-to-supply-african-health-care-workers-with-vaccines>.

[Moderna] ‘has disclosed that it doesn’t plan to distribute its vaccine in South Africa.’<sup>46</sup>

Only one person deserves greater calumny than the Minister of Health. President Cyril Ramaphosa’s actions and omissions suggest a ‘*frantic cover-up*’. This initial stage of the cover-up took the form of a head-long rush to open-up the economy while gutting a wide range of well-established public health norms. The President and his government caused a trusting citizenry to act as their leaders indicated they should act: *as if nothing at all was wrong*. Why would one act otherwise, when from Level 3 to Level 1, that is, from 1 June 2020 to 28 December 2020, the government imposed virtually no restrictions on economic or social activity for seven months (and none for almost four months at Level 1). Moreover, they likely invited a more highly transmissible variant during this far more relaxed period, thus hastening the second wave and the death spiral that inexorably followed.

As I noted in the Prologue, the President’s misdirection with respect to the pandemic occurred from the outset, if not in February 2020 then in early March 2020. After five weeks of lockdown, that ended on 1 May 2020, the government began its inexorable march toward fully opening up the economy and ignoring the public health guidelines put in place in March 2020. He had nothing to say about his government’s failure to test, trace or isolate or to increase the number of critical beds in the country or to train nurses to adequately care for patients. Just as he lacked the leadership to secure access to vaccines when they were available from the middle of 2020 to the end of 2020, he demonstrated an absence of leadership throughout most of 2020. He should have educated and trusted his citizenry – in light of what already had happened around the world from Wuhan to Milan to New York – in order to understand the cataclysm that would await them. The President did nothing between his intermittent appearances and to stem the transmission of two waves of SARS-CoV-2 driven by two different variants of the virus (the second worse than the first.) Three-and-a-half months *after* Minister of Health Zweli Mkhize publicly conceded that at least 12 million South Africans (almost 25% of adults) had been infected with SARS-CoV-2 by August 2020 in a first wave of infections, the President and his government had done nothing.<sup>47, 48</sup> For two months *after* doctors and public health officials began to warn of a second wave emerging in the Cape the President and his government did nothing.<sup>49</sup> For one month *after* Nelson Mandela Bay was declared a hot spot the President and his government had done nothing.<sup>50</sup> For

<sup>46</sup> G York ‘COVID-19 Vaccine Supplies for Africa Dwindling as Moderna Opts Out’ *The Globe and Mail* (3 January 2021), accessed at <https://www.theglobeandmail.com/world/article-vaccine-supplies-for-africa-dwindling-as-moderna-opts-out/>.

<sup>47</sup> AFP ‘Mkhize: About 12 Million People in SA May Have Contracted Covid-19’ *News24* (15 September 2020), accessed at <https://www.news24.com/news24/southafrica/news/mkhize-about-12-million-people-in-sa-may-have-contracted-covid-19-20200915>.

<sup>48</sup> Discovery Health, working with South African Medical Research Council data and its own proprietary data, established that there were some 13 million infections (rather than the reported 640 000 infections) by August 2020 and that the real COVID-19 death rate was estimated to be up to 3.1 times higher than reported figures. ‘Discovery Data Points to a Worrying and Potentially Deadly Trend in South Africa’ *BusinessTech* (9 September 2020), accessed at <https://businesstech.co.za/news/lifestyle/432762/discovery-data-points-to-a-worrying-and-potentially-deadly-in-south-africa/>.

<sup>49</sup> Doctors at public hospitals across Nelson Mandela Bay raised red flags in October 2020 – to no avail. E Ellis ‘In the Eye of the Storm: Living in South Africa’s Covid-19 Hotspot’ *Daily Maverick* (28 November 2020), accessed at [dailymaverick.co.za/article/2020-11-28-in-the-eye-of-the-storm-living-in-south-africas-covid](http://dailymaverick.co.za/article/2020-11-28-in-the-eye-of-the-storm-living-in-south-africas-covid).

<sup>50</sup> ‘Nelson Mandela Bay Declared a Hotspot’ *South African Government News Agency* (3 December 2020),

almost three weeks *after* Minister Mkhize finally acknowledged that a second wave was ripping through four provinces like a deadly tsunami,<sup>51</sup> the President and his government had done nothing.<sup>52</sup> Two weeks after the government missed its payment deadline – for the second time – for the 15% deposit required to secure access to vaccinate a mere 10% of the population via the COVAX facility (despite confirmation of the availability of the funds through the Solidarity Fund), the President and his government had done nothing to secure additional vaccines for the remain 90% of the population – or at least the 70 to 80% of the population that might establish herd immunity. Might.<sup>53, 54</sup> Ten days *after* Minister Mkhize confirmed that a more highly transmissible form of SARS-COV-2 (the ‘501.V2 Variant’), was, along with Level 1 government sanctioned social behaviour, responsible for 90% of new infections and accelerating the second wave,<sup>55</sup> the President and his government had done nothing. Two days *after* *The New York Times* and other newspapers worldwide reported in late December 2020 that South Africa’s health system had crumbled under the weight of the COVID-19 pandemic, and that our nurses could not adequately care for their patients, instead of accepting responsibility for the consequences of his political decisions, the President cast the blame on the citizens who had placed their trust in his leadership.<sup>56</sup>

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accessed at <https://www.sanews.gov.za/south-africa/nelson-mandela-bay-declared-hotspot>

- <sup>51</sup> ‘Mkhize Declares Second Wave of Covid-19 in South Africa as New Cases Pass 6,000 in A Day’ *BusinessTech* (9 December 2020), accessed at <https://businesstech.co.za/news/trending/455928/mkhize-declares-second-wave-of-covid-19-in-south-africa-as-new-cases-pass-6000-in-a-day/>. Mkhize noted that the following factors had been taken into consideration when determining whether the country had entered a new wave: ‘the number of tests done, the positivity rate, the number of positive cases, the numbers of people who are admitted to ICU, and the number of fatalities.’ The actual veracity of this claim is rather dubious given that South Africa effectively stopped testing in any meaningful way by August 2020. (Forget tracing or isolating.) After Minister Mkhize’s announcement regarding the crushing effects of the second wave in the Eastern Cape, Western Cape, Gauteng and KwaZulu-Natal, the President recognised that the infections were also ‘alarmingly on the rise in Limpopo.’ ‘Statement by President Cyril Ramaphosa on the National Effort to Contain the COVID-19 Pandemic’ *The Presidency: Republic of South Africa* (28 December 2020), accessed at <http://www.thepresidency.gov.za/speeches/statement-president-cyril-ramaphosa-progress-national-effort-contain-covid-19-pandemic%2C-tuynhuys%2C-cape-town>.
- <sup>52</sup> K Cowan ‘Covid-19 Hospital Admissions Data Shows Multiple Facilities under Pressure in Hotspot Provinces’ *News24* (11 December 2020), accessed at <https://www.news24.com/news24/southafrica/investigations/covid-19-hospital-admissions-data-shows-multiple-facilities-under-pressure-in-hotspot-provinces-20201211>.
- <sup>53</sup> A Sguazzin ‘South Africa Misses Covax Deadline to Secure Vaccines’ *Bloomberg Quint* (17 December) 2020, accessed at <https://www.bloombergquint.com/business/s-africa-misses-covax-deadline-yet-to-make-payment-guarantee>.
- <sup>54</sup> *ibid.* Bloomberg noted on 17 December 2020 that at that point, there was still no guarantee in place to cover the remaining 85% outstanding on the full payment. Payment of the initial 15% deposit was finally made on 22 December 2020. ‘South Africa Makes R283 Million Down Payment for Covax Vaccine Participation’ *BusinessTech* (22 December 2020), accessed at <https://businesstech.co.za/news/trending/458110/south-africa-pays-r283-million-down-payment-for-covax-vaccine-participation/>.
- <sup>55</sup> ‘New COVID-19 Variant Identified in SA’ *COVID-19 South African Online Portal* (18 December 2020), accessed at <https://sacoronavirus.co.za/2020/12/18/new-covid-19-variant-identified-in-sa/>.
- <sup>56</sup> S Fink ‘As Virus Resurges in Africa, Doctors Fear the Worst Is Yet to Come’ *The New York Times* (26 December 2020), accessed at <https://www.nytimes.com/2020/12/26/world/africa/>

President Ramaphosa claimed that we, the people, had ‘let down our guard’ and were therefore responsible for both waves of transmission.<sup>57</sup>

The people of South Africa – led on this death spiral by President Ramaphosa himself – had no reason to suspect that something was gravely amiss.<sup>58</sup> As Estelle Ellis makes patently clear: The people were ‘confused. They thought the virus was gone.’<sup>59</sup>

We had Tom Pueyo’s ‘The Hammer and The Dance’ to guide us from March 2020 onwards. Our failure to follow that trial and error, reflexive, feedback mechanism model has led to both severe, and likely permanent, damage to the economy, and as yet incalculable damage to the health of tens of millions of South Africans. What our elected and appointed leaders refuse to acknowledge is that a large second wave and the inevitable cuts to COVID-19 stimulus and relief, constitute the primary threats to a meaningful economic recovery.<sup>60</sup> However, as the South African Medical Association noted at the end of December 2020, South Africa no longer possesses the resources to stem the transmission of SARS-CoV-2. As they put it pithily, South Africa is broke, cannot afford new relief packages and must rely on the continued open economy in order to keep a majority of the population from starving to death.<sup>61</sup> Finally, South Africa – despite its sophisticated responses to HIV and TB and showy R800 billion economic stimulus package – made absolutely no effort to secure access to a safe and efficacious vaccine. As I noted above, several of South Africa’s leading scientists have pointed out:

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africa-coronavirus-pandemic.html?searchResultPosition=2.

<sup>57</sup> ‘Statement by President Cyril Ramaphosa on Progress in the National Effort to Contain the COVID-19 Pandemic, Tuynhuys, Cape Town’ *The Presidency: Republic of South Africa* (28 December 2020), accessed at <http://www.thepresidency.gov.za/speeches/statement-president-cyril-ramaphosa-progress-national-effort-contain-covid-19-pandemic%2C-tuynhuys%2C-cape-town>.

<sup>58</sup> E Ellis ‘In the Eye of the Storm: Living in South Africa’s Covid-19 Hotspot’ *Daily Maverick* (28 November 2020), accessed at [dailymaverick.co.za/article/2020-11-28-in-the-eye-of-the-storm-living-in-south-africas-covid-19-hotspot](http://dailymaverick.co.za/article/2020-11-28-in-the-eye-of-the-storm-living-in-south-africas-covid-19-hotspot): Healthcare workers in Nelson Mandela Bay argued that government’s original decision to shift to Level 1 was a key source of problems, given that it ‘...confused people. They thought the virus was gone.’

<sup>59</sup> *ibid.*

<sup>60</sup> S Liedtke ‘Second Wave, Cuts to Covid Relief are “Main Threats” to Economic Recovery’ *Polity* (12 December 2020), accessed at <https://www.polity.org.za/article/second-wave-cuts-to-covid-relief-are-main-threats-to-economic-recovery-2020-12-10>:

South Africa’s economic recovery, which outperformed forecasts by the International Monetary Fund (IMF), is in [grave] danger of regressing as [a] a second wave of the Covid-19 virus fueled by ... socialising and [cross-country] travel and [b] the planned termination of two large relief programmes hit the country. The planned effective termination of the Unemployment Insurance Fund (UIF) Temporary Employer/Employee Relief Scheme and the Covid-19 Special Grant is planned for January 2021.

<sup>61</sup> ‘SA Medical Associations Say Lockdown World Be Counterproductive’ *EWN News* (9 January 2021), accessed at <https://ewn.co.za/2021/01/09/harder-lockdown-would-be-counterproductive-says-sa-medical-association>.

‘[The government’s] communication strategy bears the hallmarks of a *frantic cover-up* and evasion of culpability.’<sup>62, 63, 64</sup>

Even if South Africa is able to secure efficacious vaccines sometime in 2021, recall what Carrie Arnold wrote at the end of 2020:

[A] viable vaccine [or suite of vaccines] will trigger a staggeringly complex chain of events ... [that] must occur in perfect lockstep using a global supply chain that needs to reach even the planet’s most remote areas – the same supply chain that left parts of the world in desperate need of things like disposable gloves and protective equipment just months ago ... [In addition] exactly how many people need to be vaccinated to end the pandemic [will] depend on how effective the vaccine[s] [are], and how long the immunity it provides lasts.<sup>65</sup>

In light of such demands to secure a healthy, renewed South African polity, one must treat with shock and horror, the pronouncement by the Chief Justice of South Africa:

I lockout every demon of Covid-19. I lock out any vaccine that is not of you, if there be any vaccine that is of the devil meant to infuse 666 in the lives of people, meant to corrupt your DNA.<sup>66</sup>

<sup>62</sup> A Dasoo, G Gray, G Richards, M Mendelson, F Abdullah, F Venter, J McIntyre, A Wulfsohn & A van den Heever ‘Vaccines for South Africa’ *Daily Maverick* (2 January 2021), accessed at <https://www.dailymaverick.co.za/article/2021-01-02-vaccines-for-south-africa-now/>. (Emphasis added). These scientists describe the frantic cover-up as follows:

Astonishingly, even now, in the full knowledge of what we face and with dozens of countries worldwide, including African nations, embarking on mass vaccination programmes against Covid-19, it is distressing to hear senior officials increasingly talking down the prospects for the availability and usefulness of Covid-19 vaccines in South Africa. This position is, at best, inexplicable ... Public acknowledgement by officials that they didn’t think it prudent to begin bilateral negotiations with vaccine suppliers, because they could not ‘take the risk’ of ordering vaccines in the event that they would not work, is shockingly disingenuous. An Advanced Market Commitment does not require upfront payment for the vaccine and commits the buyer to purchase vaccine only when it becomes available, at an agreed price and quantity. It is a dangerous misconception, often exercised by arrogant local officialdom, to presuppose that a populace will willingly believe any deliberate fiction put to them. *However, it will be even more worrying if these officials’ comments were made in ignorance of an elementary advance purchase mechanism and impels urgent enquiry into their fitness to manage such a critical portfolio ... Their admonishment that vaccines are not a ‘silver bullet’, or that they ‘do not end epidemics’ are frankly astounding.*

<sup>63</sup> J Michaud & J Kates ‘The Dangers of Vaccine Disillusionment: A Viable Immunization Is Good News, but Realities Won’t Match Expectations for Many Months’ *Foreign Affairs* (2 December 2020), accessed at <https://www.foreignaffairs.com/articles/united-states/2020-12-02/dangers-vaccine-disillusionment?>

<sup>64</sup> S Baker ‘Rich Countries Are Accused of “Hoarding” Coronavirus Vaccines, Leaving Poorer Nations at Risk of Struggling with their Outbreaks For Years’ *Business Insider* (9 December 2020), accessed at <https://www.businessinsider.com/coronavirus-vaccine-rich-countries-hoarding-shots-poor-nations-struggling-campaigners-2020-12>; J Wheatley ‘Why the Developing World Needs a Bigger Pandemic Response’ *Financial Times* (24 November 2020), accessed at <https://www.ft.com/content/f665b6d2-79f8-49e9-9c93-3602c42ecf83>. While Baker makes too early a case for hoarding, at least one South African has had the courage to take responsibility for the vaccine ‘cover-up.’

<sup>65</sup> C Arnold ‘What Will It Take to Get a Covid-19 Vaccine to the World?’ *The New Scientist* (18 November 2020), accessed at <https://www.newscientist.com/article/mg24833093-800-what-will-it-take-to-get-a-covid-19-vaccine-to-the-world/#ixzz6f9U8QoD6>. See also H Kucklar & H Murphy ‘Covid Vaccine Supply Chain Targeted by Hackers, say Security Experts: Sophisticated Operation Likely to Have Been Backed by a Nation State’ *Financial Times* (3 December 2020), accessed at <https://www.ft.com/content/9c303207-8f4a-42b7-b0e4-cf421f036b2f>. One more thing to keep you up at night!

<sup>66</sup> ‘South Africa Chief Justice under Fire for Calling COVID-19 Vaccine Satanic’ *Africa News* (11 December 2020), accessed at <https://www.africanews.com/2020/12/11/>

It would appear that neither the President nor the Chief Justice have been willing or able to follow the science and safeguard the majority of South Africans from the devastation brought about by COVID-19.

To reiterate this last point, we have been left with a government incapable of improving the healthcare system to meet the needs of the COVID-19 pandemic or to secure truly efficacious vaccines that might have helped bring about an end to the pandemic.<sup>67</sup> It comes as cold comfort that a doctor on the Health Minister's COVID Ministerial Advisory Committee – Dr Abdool Karim – finally chose to come out six months too late as December 2020 turned to January 2021, and admit that he had failed in his personal capacity and by implication the government's capacity to start securing access to vaccines. We weren't broke then. We are now.<sup>68</sup>

It's about time, therefore, that we recognise that while a scientific resolution may be on the immediate horizon, at least for those persons who live in countries with the capacity to both support the pharmaceutical initiatives as well as to recover the costs of those initiatives, putting paid to this wicked problem remains a political problem that effects every person on the planet. Thus far, the decision-making with regard to how to engage this pandemic, from both public health and economic perspectives, has left quite a lot to be desired. But that's the price of politicising a pandemic – as South Africans are learning at the end of December 2020.<sup>69</sup> Mask wearing remains catch as catch can. Social distancing remains impossible – from home to taxi rank to work – for most South Africans. And the general population remains sceptical of government pronouncements because the government itself has refused to follow the science and has failed to uphold its end of the social contract and safeguard the public health and wellbeing of the people. Or as Professor Francois Venter more politely put it: '[P]olitical decisions masked as health decisions undermine public trust even further ... The whole year has been characterized by poor and bizarre government decisions.'<sup>70</sup> These poor and bizarre government decisions fall at the feet of the President and his NCCC. Finally, they answer the question as to whether or not this government has us on the path toward an inclusive democracy, or whether it remains an autocratic, extractive government that has us on the road toward state failure.

### *Jeux Sans Frontières – or, How I learned to love the bomb*

Because the last (and only) nuclear weapons used militarily were dropped by the United States 75 years ago on Hiroshima and Nagasaki, Japan, people tend to discount the possibility that it will happen again – in one form or another. It certainly doesn't help matters that the nine countries that possess nuclear weapons, and one or two on the cusp,

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south-africa-chief-justice-under-fire-for-calling-covid-19-vaccine-satanic/.

<sup>67</sup> A Karrim "I Let Our Country Down," Says Prof Salim Abdool Karim on SA's Covid-19 Vaccine Race – Report' *News24* (12 January 2020), accessed at <https://www.news24.com/news24/southafrica/investigations/i-let-our-country-down-says-prof-salim-abdool-karim-on-sas-covid-19-vaccine-race-report-20210112>.

<sup>68</sup> *ibid.*

<sup>69</sup> D Jiménez 'There's a Simple Reason Spain Has Been Hit Hard by Coronavirus: Spaniards Did Their Part, Staying Home And Wearing Masks – But Politicians Quarrelled Among Themselves and Repeated the Mistakes of the First Wave of the Virus' *The New York Times* (24 September 2020), accessed at <https://www.nytimes.com/2020/09/24/opinion/spain-pandemic-second-wave.html?>

<sup>70</sup> 'Government's Handling of the Vaccine Can Be Better: Prof Venter' *ENCA News* (25 December 2020), accessed at <https://www.enca.com/news/governments-handling-vaccine-can-be-better-prof-venter>.

are not playing nicely with one another.<sup>71</sup> In 2010, the Doomsday Clock stood at 11:55 pm – five minutes before midnight. A decade later, the Bulletin of Atomic Scientists have us at t-minus 11:58 and 20 seconds (and counting.) This exogenous, global problem, as Chapter II made clear, recognises no sovereign boundaries and is very much a South African crisis, too.

*Why would I hire a human being who doesn't know anything?*

On 18 September 2020, the following announcement received widespread attention:

South Africa's government is insisting that flag-carrier South African Airways will not be liquidated, and that it will detail measures relating to funding the airline in [the Adjustments Appropriation Bill.] [The] [D]epartment of [P]ublic [E]nterprises gave the reassurance as creditors met to discuss the airline's future, after its rescue practitioners warned that critical funding had not been delivered.<sup>72</sup>

This decision did not go uncontested.

SAA, which last made a profit almost a decade ago and has been reliant on state bailouts to survive, has been in administration since December. Finance Minister Tito Mboweni has long argued that the government can't continue funding the national carrier, putting him at odds with the top leadership of the ruling African National Congress and Public Enterprises Minister Pravin Gordhan, who insist it must keep flying.<sup>73</sup>

Mboweni seemingly lost. But – in more government misdirection – Gordhan found himself defending an SOE that had sold off most of its equipment – over two-thirds of the fleet – and no longer had the capacity to make profitable long-haul trips. Most of what SAA currently has left on its books is debt. As Ethiopian Airlines, one of the few parties interested in (partially) bailing SAA out, made clear, it was not interested in taking on any of a decade of accrued liability to enable SAA to remain a going concern. Irrespective of

<sup>71</sup> The United States has not only pulled out of multiple nuclear arms limitations treaties. It has suggested that it will be increasing stockpiles and resuming tests. Naturally, that raises concerns amongst three other belligerent nuclear powers – Russia, China and North Korea. Russia and the US are already on the opposite sides of proxy wars – and Putin needs US sabre-rattling to justify his continued grip on power and the expenditure of limited resources on increasing its own nuclear arsenal. China and the US have now officially entered a cold war on all fronts, and China is eager to flex its muscles throughout Asia and beyond. India is led by another authoritarian leader, Modi, who has engaged in armed skirmishes with neighboring nuclear powers Pakistan and China over rocky outposts and land that has no intrinsic value (save for its immediate inhabitants.). North Korea is more than just North Korea. It destabilises the entire Pacific region within reach – and consistently attempts to build missiles capable of delivering nuclear warheads at least as far as San Francisco. Aspirant nuclear power, Iran, perhaps with Russia's implicit blessing, may be forging ahead with its program now that that US has backed out of a multilateral agreement designed to limit sanctions. It's unlikely that Saudi Arabia will sit still for such developments, or that long-term combatant and nuclear power Israel will allow Iran to reach the final stages of weapon grade fissile materials – especially now that it has signed diplomatic normalisation agreements with Morocco, the United Arab Emirates and Bahrain. However, none of the above accounts for the possibility of non-state actors securing the means to deliver a low-tech nuclear weapon (or, say, something better that fell off the back of a truck.)

<sup>72</sup> D Kaminski-Morrow 'South African Airways Will Not Be Liquidated: Government' *Flightglobal* (18 September 2020), accessed at <https://www.flightglobal.com/airlines/south-african-airways-will-not-be-liquidated-government/140237.article>.

<sup>73</sup> S Cele & A Sguazzin 'State Airline Bailout Raises Hackles at South African Treasury' *Bloomberg News* (23 September 2020), accessed at <https://www.bloomberg.com/news/articles/2020-09-23/state-airline-bailout-raises-hackles-at-south-african-treasury?srnd=premium>.

the Public Enterprise Minister's dreams, let's consider the meaning of his insistence on pouring money into an SOE that cannot operate. Fortunately, at the end of December 2020, SAA remains dead. (Even pilots who had refused to accept that fact, finally returned to collect their final cheques.)

Describing the perilous state of South Africa's political economy is something this book has already done in gory detail and need not be rehearsed again here. Nor need we answer in detail the question of how we got ourselves into this mess. Recall Acemoglu and Robinson's crisp encapsulation:

[P]oor countries are poor because those who have power make choices that create poverty. They get it wrong not by mistake or ignorance but on purpose.<sup>74</sup>

The explanation – or a large part of it – flows from the brutal, racist policies of colonial rule and apartheid that quite consciously and purposely enslaved the vast majority of the population and thereby created a large pool of surplus labour that could both replace existing subsistence labour (say in mining and agriculture) and keep the majority of black South Africans living in abject poverty. Aside from a brief interregnum when the Reconstruction and Development Programme (1994–1996) was in place (and unemployment dipped below 17%), the magical thinking was that all boats would rise if South Africa attracted foreign direct investment. The policy had the obverse effect. Instead of ensuring that such large sums of capital would be invested in low-wage manufacturing to leverage more sophisticated and remunerative forms of employment and increasingly more complex tasks for labour in a more diversified and complex economy, South Africa soon ranked ninth in the world in foreign investment (in other countries) and third in the world in terms of percentage of such investment as a portion of GDP (34%). South Africa certainly possessed the wealth, the infrastructure and the sophistication to follow through on the redistributive aims of the RDP and the developmental route adopted in other parts of the world during the 1990s. It just didn't.

Instead, its political institutions, like its economic institutions, remained extractive – especially under President Zuma's kleptocracy. Lots of nations get by, for centuries, even millennia (think China), with purely extractive political regimes – as long as there's just enough to go around. However, after two successive recessions during the first two years of Cyril Ramaphosa's presidency (2018–2019), we got utterly crushed by the COVID-19 induced recession of 2020. As a result, we now court Turchinean failure or Tainter-like collapse. How else to describe a society with an unemployment rate that reached 52% in the third quarter of 2020,<sup>75</sup> and youth unemployment that has risen well above 60% and could easily breach 70%.<sup>76</sup> Worse still, this cohort of unemployed and often unskilled persons now face the truly depressing prospect of never entering the workplace at all: they could well become Vonnegut's (less well-fed) precariat.<sup>77</sup> The staggering figures of

<sup>74</sup> D Acemoglu & J Robinson *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (2012) 68.

<sup>75</sup> *Quarterly Labour Force Survey* StatsSA (26 November 2020).

<sup>76</sup> It's virtually impossible to overestimate the unemployment figures in South Africa, when mining, manufacturing and tourism (and aligned service industries) have come to a complete halt. K Le Roux 'South Africa's Economy to Shrink by 23.5% in Q2: Africa's Most Developed Economy is Heading for a Very Cold Economic Winter, says ABSA Senior Economist Peter Worthington' *CapeTalk* (3 April 2020), accessed at <https://www.capetalk.co.za/articles/379782/south-africa-s-economy-to-shrink-by-23-5-in-2q-2020-absa-forecast>.

<sup>77</sup> A South African newspaper reported in 2017 that 60.3% of unemployed young people in South Africa

unemployment, generally, and youth unemployment in particular, constitute a recipe for social implosion.<sup>78</sup>

A bankrupt energy utility that cannot keep the lights on, along with a raft of other bankrupt SOEs, will not help revive an already weak formal economy. Given the emergency budget designed to manage the carnage created by the COVID-19 pandemic, the expected contraction of the 2021 fiscus by upwards of R300 billion, the cutting of more core services and a wage freeze of public sector employees at 0% for three years before a proposed R311 billion (40%) cut in 2023, reflects the same rudderless leadership that mismanaged the pre-COVID economy and crushed what remained in just a few months of COVID-19 kabuki theatre.

If South Africa follows global trends or merely its own downward trajectory, many of the jobs lost during 2020 will vanish for good. The reason: the lockdowns and restrictions caused by the response to the pandemic have enabled many firms to scale up the use of AI, automation and other disruptive technologies. As previously noted, a Nielsen study on the impact of COVID-19 on consumer behaviour found that 37% of South Africans say they do more shopping online. Gareth Paterson, an author of the study, said: ‘Amid the strange new world of Covid-19, online grocery shopping has been a lifeline for many South African consumers, who have desperately sought out safe and secure shopping alternatives amid the uncertainty of lockdown living.’<sup>79</sup> Deloitte’s broader study of retail in May 2020 revealed that:

COVID-19 has fast-tracked the need for digital transformation in retail, highlighting the necessity to operate and serve customers differently. Retailers need to adjust how they approach customer experience, employees, supply chain and category management, as well as hygiene.<sup>80</sup>

However, retail is but one sector experiencing significant permanent technological unemployment. We’ve seen online banking become so deeply entrenched that a substantial number of physical branches in Johannesburg have been shuttered – tracking closely a McKinsey survey of the sector.<sup>81</sup> We’ve seen the mining sector – especially along the Platinum belt – begin to use increasing amounts of automation, in part to increase profits, and in part to diminish the size of the workforce in order to avoid future Marikana-like conflicts and massacres.

Manufacturing could easily follow suit. MusashiAI, a joint venture between Musashi Seimitsu of Japan (a Honda Motor Corp. affiliate) and SixAI Ltd. of Israel, announced

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have never, ever worked. D Yu ‘The Lesser Known and Scarier Facts about Unemployment in South Africa’ *Mail & Guardian* (4 September 2017), accessed at <https://mg.co.za/article/2017-09-04-the-lesser-known-and-scarier-facts-about-unemployment-in-south-africa>. A 2018 study showed that the longer a person is unemployed, the less likely it is that they will be able to re-enter the job market. JZ Nonyana & PM Njuho ‘Modelling the Length of Time Spent in an Unemployment State in South Africa’ (2018) 114 *South African Journal of Science* 70, 73, 75–76.

<sup>78</sup> S Woolman ‘Is Xenophobia the Right Legal Term of Art? A Freudian and Kleinian Response to Loren Landau on the Violence in South African Townships’ (2011) 21(2) *Stellenbosch Law Review* 285.

<sup>79</sup> P Larkin ‘Huge Surge in Online Essential Shopping’ *The Independent Online* (1 May 2020), accessed at <https://www.iol.co.za/personal-finance/my-money/huge-surge-in-online-essential-shopping-47383471>.

<sup>80</sup> Deloitte *BrandsEye Consumer Sentiment Report* (July 2020), accessed at [https://www2.deloitte.com/content/dam/Deloitte/za/Documents/za\\_Deloitte\\_BrandsEye\\_Consumer-Sentiment-report\\_May%202020.pdf](https://www2.deloitte.com/content/dam/Deloitte/za/Documents/za_Deloitte_BrandsEye_Consumer-Sentiment-report_May%202020.pdf).

<sup>81</sup> McKinsey & Co *Online Banking Survey* (2020), accessed at <https://www.mckinsey.com/industries/financial-services/our-insights/reshaping-retail-banking-for-the-next-normal>.

that ‘it’s now selling an autonomous visual quality control inspector and an autonomous forklift driver.’<sup>82</sup> The inspectors are especially attractive because:

[a]n advanced form of deep learning which parallels the way the human brain absorbs and assimilates information was developed, making redeploying and switching robots between tasks much easier. These improvements are central to MusashiAI’s latest robotic models, which the company anticipates will be essential in the many socially-distanced industrial settings to come.<sup>83</sup>

As for the forklifts:

[L]ogistics tasks previously limited to human forklift drivers can now be autonomously performed by the robots and that they ‘exceed modeled expectations with their unparalleled efficiency, cost-effectiveness, and safety standards.’<sup>84</sup>

Reskilling such machines is far more cost-effective and far less disruptive than retooling persons.

So, what is really going on – from retail to banking to mining to manufacturing?

As Acemoglu and Restrepo explain, historically, automation has driven development, or the manner in which technology, capital and labour, in concert, increase productivity. In the short term, novel technology displaced labour. However, profits earned from increases in productivity have, historically, created new industries that enhance and reinstate labour at higher wages. Simply put, that’s how, over the course of two centuries, half of the planet’s impossibly large population became middle-class or rich.<sup>85</sup> At the same time, significant efforts were made by social and liberal welfare states and national socialist nations to eliminate extreme poverty, food level poverty and working poor poverty.

Unfortunately, conscious policy decisions taken over the last 40 years have resulted in economies in which novel technology and capital have reshaped the workforce in a manner that has led to displacement without a meaningful reinstatement effect.<sup>86</sup> This trend has turned what was, in the past, merely temporary ‘technological unemployment’ into ‘permanent technological unemployment’:

Today too we are witnessing a period of rapid automation. The jobs of production workers are being disrupted with the rise of industrial robots and other automated machinery, while white-collar workers in accounting, sales, logistics, trading, and some managerial occupations are seeing some of the tasks they used to perform being replaced by specialized software and artificial intelligence.<sup>87</sup>

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<sup>82</sup> ‘New Robotic Employees – Quality Control Inspector and Forklift Driver’ *Industry Week* (27 July 2020), accessed at [https://www.industryweek.com/technology-and-iiot/article/21137632/new-robotic-employees-quality-control-inspector-and-forklift-driver?utm\\_](https://www.industryweek.com/technology-and-iiot/article/21137632/new-robotic-employees-quality-control-inspector-and-forklift-driver?utm_).

<sup>83</sup> *ibid.*

<sup>84</sup> *ibid.*

<sup>85</sup> Or to recast this point in Gibsonian vernacular: every miraculous birth on this overheated, overpopulated planet means, quite literally, two more carbon-based footprints, footprints that may or may not survive long on the periphery.

<sup>86</sup> D Acemoglu & P Restrepo ‘Automation and New Tasks: How Technology Displaces and Reinstates Labor’ (2019) 33 (2) *Journal of Economic Perspectives* 3.

<sup>87</sup> D Acemoglu & P Restrepo ‘Automation and New Tasks: How Technology Displaces and Reinstates Labor’ (2019) 33 (2) *Journal of Economic Perspectives* 3., citing G Graetz & Michaels ‘Robots at Work’ (2018) 100 *Review of Economics and Statistics* 753.

Where new technologies induce sizeable displacement effects and only a marginal gain in productivity, the space for expansion of the labour market through new deployments of capital is likely to be minimal. Where displacement occurs without reinstatement, labour's share of an industry's value will shrink rather than grow. That leads to a point pressed throughout this book: the *acceleration* of automation and diminished new tasks for labour ought to be of real and immediate concern to policymakers.<sup>88</sup> While Acemoglu and Restrepo had been somewhat agnostic about what the acceleration of automation might mean for advanced and emerging economies, they had changed their tune by March 2020 – prior to the pandemic.<sup>89</sup> The COVID-19 pandemic has now removed much of the remaining doubt – as some economists conclude that up to 42% of the jobs of the those laid off in liberal capitalist democracies such as the United States will vanish (at least in part due to automation introduced because of the social distancing required during an ongoing pandemic<sup>90</sup>). Whereas most middle- to upper middle-class jobs – which can be conducted remotely (a relatively novel work technology) – have been restored, the vast majority of lower middle-class and working-class service sector jobs have not as yet. As I noted above, these events lead Acemoglu and Robinson to this critical observation:

*[I]f the origin of productivity growth in the future continues to be automation, the relative standing of labour, together with the task content of production, will decline. The creation of new tasks and other technologies raising the labour intensity of production and the labour share are vital for continued wage growth commensurate with productivity growth. Whether such technologies will be forthcoming depends not just on our innovation capabilities but also on the supply of different skills, demographic changes, labour market institutions, government policies including taxes and research and development spending, market competition, corporate strategies, and the ecosystem of innovative clusters. We have pointed out some reasons why the balance between automation and new tasks may have become inefficiently tilted in favor of the former – with potentially adverse implications for jobs and productivity – and some directions for policy interventions to redress this imbalance.<sup>91</sup>*

What do these conclusions mean for South Africa? Automation and diminished tasks for the labour force are real concerns for well-educated, economically diversified, dynamic, relatively inclusive and wealthy polities. It's reasonable to draw the conclusion that South Africa – with its fairly low degrees of educational attainment and skills development, and limited social, economic and political cohesion – will have difficulty creating labour, tax or basic income scheme policies adequate to the challenge posed by permanent technological unemployment.

'Difficulty' may be an understatement. At the end of December 2020, nine months after President Ramaphosa announced a hard lockdown, the government had yet to promulgate a plan that addresses the long-term economic damage done by COVID-19 (or a pandemic

<sup>88</sup> *ibid.*

<sup>89</sup> D Acemoglu & P Restrepo 'The Wrong Kind of AI? Artificial Intelligence and The Future of Labour Demand' (2020) 13 *Cambridge Journal of Regions, Economy and Society* 25, accessed at <https://doi.org/10.1093/cjres/rsz022>.

<sup>90</sup> J Barrero, N Bloom & S Davis 'COVID-19 is also a Reallocation Shock' *Working Paper No. 2020-59 Becker Friedman Institute, University of Chicago School of Business* (May 2020) 5. See also Board of Governors of the Federal Reserve System *Beige Book* (May 27, 2020), accessed at <https://www.federalreserve.gov/default.htm>.

<sup>91</sup> D Acemoglu & P Restrepo 'Automation and New Tasks: How Technology Displaces and Reinstates Labor' (2019) 33 *Journal of Economic Perspectives* 4. (Emphasis added)

that is far from over). Dr Iraj Abedian, Chief Executive of Pan-African Investment and Research Services (Pty) Ltd and, formerly, a professor of economics at the University of Cape Town described the government's absence of a viable response as: 'Not fixing an airplane mid-air when there are problems and just flying in the hope that it will fix itself.'<sup>92</sup> As December 2020 gave way to January 2021, the ongoing policy paralysis promised 'a much deeper recession ... and with that more poverty.'<sup>93</sup> If the current government cannot address the most immediate of threats to the polity – a deeper recession with more people falling below the food poverty line – then a country that falls in the bottom quadrant of technological development can hardly be expected to respond with any sense of urgency to the far more complex, long-term existential threat posed by permanent technological unemployment.

Given the abject failure of the state and the broader society to create more inclusive political and economic institutions, or to address the panoply of wicked problems assayed in these pages, there's no reason to expect that South Africa's experiment in inclusive democracy will succeed. Political projects fail all the time. Some constitutional democracies collapse after 230 years, and some after a mere 26 years.

As Richard Adelstein sagely added to Yogi Berra's tautology – 'It ain't over, til it's over': 'But when it's over, it's over.'

### C. Why the Dearth of Inclusive Democracies Fuel Most Wicked Problems

The four wicked problems discussed in this book lay bare another underlying wicked problem – the weakness of democracy itself around the world. 'Full democracies' are:

- nations where civil liberties and fundamental political freedoms are not only respected but also reinforced by a political culture conducive to the thriving of democratic principles.
- nations [that] have a valid system of governmental checks and balances, an independent judiciary whose decisions are enforced, governments that function adequately, and diverse and independent media.<sup>94</sup>

Only 22 nations (out of some 200 countries) actually satisfy these rather expansive criteria. Another 52 countries qualify as flawed democracies:

- nations where elections are fair and free and basic civil liberties are honoured but may have issues (e.g., media freedom infringement and minor suppression of political opposition and critics).
- nations have significant faults in other democratic aspects, including underdeveloped political culture, low levels of participation in politics, and issues in the functioning of governance.<sup>95</sup>

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<sup>92</sup> M Lindeque 'The Longer Govt's Recovery Plan Takes, The Bigger the Economic Crisis – Experts' *Eyewitness News* (28 September 2020), accessed at <https://ewn.co.za/2020/09/28/the-longer-govt-delays-recovery-plan-the-bigger-the-economic-crisis-experts>.

<sup>93</sup> *ibid.*

<sup>94</sup> Democracy Index 2019 'A Year of Democratic Setbacks and Popular Protest' *The Economist Intelligence Unit* (24 January 2020), accessed at <https://www.eiu.com/n/campaigns/democracy-index-2019/>; Democracy Index 2015 'Democracy in an Age of Anxiety' *The Economist Intelligence Unit* (5 March 2016), accessed at <https://www.eiu.com>.

<sup>95</sup> *ibid.*

Given that only 10% of extant nations count as full democracies, it should come as little surprise that the remaining 90% struggle, to varying degrees, with creating political and economic institutions that recognise all citizens as worthy of equal concern and respect. This legal-cum-ethical/political disability makes it, in turn, difficult if not impossible for the citizens of such extractive states to create popular support for inclusive multilateral or multinational organisations which require the recognition of foreigners in other lands as persons likewise entitled to equal concern and respect.

It comes as no surprise to ‘us’ that Russia’s Vladimir Putin, China’s Xi Jinping, Belarus’s Alexander Lukashenko or Saudi Arabia’s Crown Prince Mohammed Bin Salman conduct their affairs – domestic and foreign – in an entirely transactional manner, twisting arms as a matter of course. But to move, in the course of a single day in January 2017, from Barack Obama to Donald Trump proved particularly jarring – for this New Yorker, American born. Obama represented American interests abroad through global agreements such as the Paris Accord or negotiated multilateral treaties such as Joint Comprehensive Plan of Action (JCPOA) on Iran’s nuclear programmes that embraced Iran, China, France, Russia, the United Kingdom, United States and Germany. Trump, whose narcissism, sociopathology and goldfish-like attention span, made it impossible for him to see any agreement in any terms other than transactional, not only destabilised the United States and the rest of the planet, but elicited the world’s pity:

‘I feel sorry for Americans,’ said U Myint Oo, a member of parliament in Myanmar. ‘But we can’t help the U.S. because we are a very small country.’ The same sentiment prevails in Canada, one of the most developed countries. Two out of three Canadians live within about 60 miles of the American border. ‘Personally, it’s like watching the decline of the Roman Empire,’ said Mike Bradley, the mayor of Sarnia, an industrial city on the border with Michigan, where locals used to venture for lunch.<sup>96</sup>

Fortunately, a victory by Democrats in 2020/2021 allowed them to reclaim the White House, the House of Representatives and the Senate. This rearrangement of power will enable the government to pass a raft of new, more progressive pieces of legislation and regulations and to re-enter the sphere of foreign relations by rejoining the Paris Accord and bolster American support for multinational institutions around the globe. Let’s see if these interventions change worldwide perceptions.

South Africa has seen itself viewed as a country led by a President, Nelson Mandela, who served 27 years in prison so that others might liberate a nation, who stepped down after a single term to prove a point about democracy in Africa and who commanded the respect of both powerful empires and countries in a ‘non-aligned world’. It has also born witness to the iniquitous behaviour of President Jacob Zuma and the rest of his government. The scale of the public and private graft and maladministration has led both insiders and outsiders to conclude that the country’s elitist and extractive political and economic institutions bear all the hallmarks of a failed state. We too are the objects of pity.

We have seen that nations can, on scale, behave quite differently. The Next Generation European Union Accord – reached between 27 very different European nations – may yet demonstrate that democracies (mostly full, but some quite flawed) could see the short- and long-term needs of others as consistent and inextricably connected with their own. Here

<sup>96</sup> H Beech “I Feel Sorry for Americans”: A Baffled World Watches the US’ *The New York Times* (25 September 2020), accessed at <https://www.nytimes.com/2020/09/25/world/asia/trump-united-states.html>.

more (or less) inclusive democracies could build a more inclusive multinational institution in which the wealthier nations assumed responsibility for their poorer brethren (during the COVID-19 pandemic and beyond). The NGEU reveals what humanity is capable of when we see each other in one another – superficial differences like language and culture aside. However, as we saw in Chapter V, that battle over the soul of democracy and the rule of law in the European Union has yet to be truly won, or truly lost.<sup>97</sup>

Unfortunately, even if that battle is somehow won, the NGEU may just be an aberration. Until such a time as the other 180 nations on the planet begin to live under more inclusive democratic regimes, we will fail to see each other in one another, and we will fail to address adequately the wicked problems that constitute existential threats to humanity. But let's get real:

Species come. And species go.  
Species come. And species go.  
Species come. And species go.  
Species come. And species go.

Or, as Bruce Springsteen notes:

When the game has been decided, and we're burning down the clock  
And all our little victories and glories, have turned into parking lots  
When your best hopes and desires, are scattered to the wind  
And hard times come, and hard times go  
Yeah just to come again  
Bring on your wrecking ball  
Bring on your wrecking ball.

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<sup>97</sup> Autocratic, extractive regimes from Hungary to Poland have refused to have the NGEU's stimulus package tethered by such limited requirements as the rule of law, a multi-party state and rights-based necessities such as a functional judiciary.