

Communication

Making Sense of “Day Zero”: Slow Catastrophes, Anthropocene Futures, and the Story of Cape Town’s Water Crisis

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Abstract: What form do the current and future catastrophes of the Anthropocene take? Adapting a concept from Rod Nixon, this communication makes a case for the notion of slow catastrophes, whose unfolding in space and time is uneven and entangled. Taking the events of Cape Town’s Day Zero drought as a case study, this paper examines the politics and poetics of water in the Anthropocene, and the implications of Anthropogenic climate change for urban life. It argues that rather than being understood as an inert resource, fresh drinking water is a complex object constructed at the intersection between natural systems, cultural imaginaries, and social, political and economic interests. The extraordinary events of Day Zero raised the specter of Mad Max-style water wars. They also led to the development of new forms of solidarity, with water acting as a social leveler. The paper argues that the events in Cape Town open a window onto the future, to the extent that it describes something about what happens when the added stresses of climate change are mapped onto already-contested social and political situations.

Keywords: slow catastrophes; anthropocene futures; Cape Town; “Day Zero”; water; hydrocitizenship

1. Slow Catastrophes

Increasingly, a journey into the Anthropocene is a journey into the unknown, as previously taken-for-granted resources and infrastructures become scarce or break down. This is certainly the case with fresh drinking water. The idea that a tap is turned and the water flows seems basic to our civilization, and is a key index of modernity. The countervailing image—that the tap is turned and nothing happens—runs up hard against the perilous and unpredictable nature of the new era into which society has entered. This paper tracks the events around the unfolding water crisis in Cape Town between 2017 and 2019 as a way of thinking about the catastrophic effects of Anthropogenic environmental change. One of the authors’ starting points is the idea that Cape Town opens a window onto the future, to the extent that it suggests what might happen when the added stresses of climate change are mapped onto already contested social, political and economic situations. Through the course of the paper, a set of linked arguments are made. One argument is that rather than being an inert resource, clean drinking water is a complex object, constructed at the point of the intersection between natural systems, cultural imaginaries, and social, political and economic forces and interests. A second argument is that rather than being a moment of climatic crisis that elicited a technical response—as the future shocks of the Anthropocene to play out—Cape Town’s brush with Day Zero was a more layered and mediated event. As such, what might be called the politics and poetics of water came to the fore, in addition to questions of management, infrastructure, and the like. The politics and poetics of water indicates the dual sense in which a person’s relationship to water is both intimate, embodied

and subjective, as well as being mediated by infrastructures, policies and social, political and economic concerns. A third argument is that the decisive factor in averting Day Zero lay not in the realm of political leadership, astute management, or a technical quick-fix, but rather in the realm of changing behaviours at the level of the individual household. In effect, the key to resolving the crisis lay in changing intimately embodied relationships to water understood as a precious resource.

First, there is some conceptual work in thinking about the nature of the catastrophe itself. A typical dictionary definition of catastrophe is “an event causing great and usually sudden damage or suffering; a disaster” [1]. The water situation in Cape Town presents itself as a catastrophe, however, it can be argued that it is a catastrophe of a particular kind. As a way of conceptualizing the nature of this catastrophe, an idea from Rob Nixon has been borrowed and adapted, that is, his influential notion of slow violence. While violence (or catastrophes) are usually thought of as being sudden, disruptive, dramatic and spectacular, Nixon has in mind another kind of violence. He writes: “Violence is customarily conceived as an event or action that is immediate in time, explosive and spectacular in space, and as erupting into instant sensational visibility. We need, I believe, to engage a different kind of violence, a violence that is neither spectacular nor instantaneous, but rather incremental and accretive, its calamitous repercussions playing out across a range of temporal scales.” [2] (p. 2). Extrapolating from this account, slow catastrophes have moments of drama but also moments of dormancy. Their unfolding is uneven, urgently present and pressing at one moment, seemingly gone from the world’s attention at another. It is speculated that many of the catastrophes of the shared Anthropocene future is likely to be of this nature. No doubt, there will be catastrophes whose nature will be sudden and imminent, but there are also likely to be many that announce themselves as a slow burn, a slow melt—until things accelerate and suddenly nothing is slow anymore.

There are two further ideas borrowed from Nixon. The first is that slow violence (read: slow catastrophes) presents with the problem of representation. They are not inherently media-worthy, or if they are, then they are only fitfully media-worthy. They erupt in the consciousness in bursts, but then people lose the plot, things become too complicated or seem too unresolved. This is not the territory of the explosion, the tidal wave, the deluge, the unstoppable burn, but rather something else—the unfolding human tragedy, the exponential failure of governance, the slow seeping away of will, the folding inwards of expectations. Telling the story of slow catastrophes requires that, in the words of Donna Haraway, people “stay with the trouble”, taking the time to unfold the complexity, being comfortable with ambiguity, nuance and irony [3], especially irony. The Anthropocene is likely to reveal itself to be the era of irony: Ironic injustices, ironic returns, the irony of good intentions, the irony of the chaos that can be unleashed on those that are loved most, our children and our children’s children.

The final idea that is borrowed from Nixon is the idea that slow violence (slow catastrophes) disproportionately impacts the poor of the world, and already vulnerable people, communities and nations. Of course, this is not a new idea but is one that has already been eloquently presented by, for example, the postcolonial historian Dipesh Chakrabarty, whose “The Climate of History” [4] first alerted the author to the need to rethink his own scholarly practice. This is likely to be the crowning irony of the Anthropocene—that those poor nations in the global south who bear a disproportionate cost of global capitalist development through historical processes of racial slavery, colonialism and imperialism (the losers of the first round), are also likely to bear a disproportionate burden of the cost of Anthropogenic environmental change (the losers of the second round) [5]. With all of this in mind, Cape Town is discussed next.

2. An Anthropocene Moment

In mid-January 2018, a story broke in the global media: Cape Town, a city of some four million inhabitants, was running out of water. The immediate catalyst for this media attention appears to have been a statement made by Cape Town Mayor Patricia de Lille on Monday 15 January, in which she said: “Cape Town’s average daily consumption is still too high. It has increased to 618 million litres per day, up from 578 million litres (the previous week). For each day that Cape Town uses more than 500

million litres, the city moves closer to Day Zero" [6]. Based on the current consumption, she announced that Day Zero would arrive on Sunday 22 April. The following day, Tuesday, she announced that Day Zero had been moved forward to Saturday 22 April. Day Zero—the day when city managers cut off water supplies and the taps run dry—is calculated based on the storage capacity in the five major dams that feed the city's water supply. The final 10% of water in the dams is effectively unusable, so Day Zero is pegged against the point at which dam levels fall to 13.5% of capacity. At the date of de Lille's announcement, the dam levels stood at 28.7% on average, with little immediate prospect of rainfall to replenish them.

As early as 7 December 2017, a report in *Bloomberg Businessweek* asked: "Will Cape Town Run Out of Water?" The report continues: "If "Day Zero" comes, the 4 million residents of South Africa's second-biggest city will face a catastrophe". It quotes de Lille: "We have to change our relationship to water. We have to plan for being permanently in a drought-stricken area" [7]. On 12 January, days before de Lille's announcement, the *BBC's* Gabriella Mulligan reported: "Cape Town, home to Table Mountain, African Penguins, sunshine and sea, is a world-renowned tourist destination. But it could also become famous for being the first major city in the world to run out of water" [8]. However, it was de Lille's statement setting a date for Day Zero, and thereby moving it from the realm of a hypothetical possibility to an imminent catastrophe, that unleashed a torrent of news. On 15 January, Aryn Baker reported for *Time* magazine: "Cape Town is 90 Days from Running Out of Water": "After three years of unprecedented drought, the South African city of Cape Town has less than 90 days-worth of water in its reservoirs, putting it on track to be the first major city in the world to run out of water". The report continues: "What happens when the taps are turned off? Cape Town enters Mad Max territory (well, almost). Residents will have to go to one of 200 municipal water points throughout the city where they will be allowed to collect a maximum of 25 litres (6.6 gallons) a day. Armed guards will be standing by to keep the peace . . ." [9].

On 16 January, the story was picked up by the *Mail Online* version of the *Daily Mail* ("Seaside metropolis could become the first major city in the world to run dry, mayor warns" [10], *EcoWatch* ("Will Cape Town Become the First Major City to Run Out of Water?" [11]) and *Al Jazeera* ("Cape Town confronts looming "Day Zero" water crisis" [12]). On 18 January, Trevor Nace ran the story for *Forbes* magazine under the headline: "Mad Max Scenario: Cape Town Will Run Out of Water in Just 90 Days". It continues: "The severe water shortage is due to a three year, once in a millennium drought. While meteorologists believe the drought was initially due to the strong 2015 El Nino, the drought has continued despite no longer being in El Nino conditions. Most climate models predict that as global temperatures continue to warm, South Africa will continue to receive less and less precipitation" [13]. On 19 January, the *Los Angeles Times* ran the story [14] as did *CBS News* ("Cape Town, on verge of running out of water, braces for "chaos"" [15]). On 23 January, *News24's* Jenni Evans reported that Day Zero had been brought forward to 12 April, following an announcement by City of Cape Town Deputy Mayor Ian Neilson [16]. On 24 January, the *BBC's* Mohammed Allie reported: "Cape Town water crisis: "My wife doesn't shower anymore"" [17]. That same day, the journal *Nature* ran the story under the headline: "As Cape Town water crisis deepens, scientists prepare for "Day Zero"" [18]. It quotes Jodie Miller, a water scientist at Stellenbosch University: "To be honest, I can't wrap my head around what's happening—a major metropolitan city running out of water. There are enormous ramifications to this".

On 27 January, the story ran in *The Irish Times* [19] On 29 January *The Times'* (UK) reporter, Aislinn Laing reported: "Cape Town will run out of water within weeks" [20]. On 30 January it made the front page of the *New York Times* [21], which also ran an Op-Ed piece on 1 February titled "Running Dry in Cape Town" [22]. On 1 February, *The Economist* ran the story "Why Cape Town's water could run out in April" [23]. The news reports continued. Cape Town was facing its Anthropocene moment. This is a moment which is likely to face many, perhaps most, large cities in the coming decades, and which is likely take many forms: Fire, flood, drought, mudslide, or the slow breakdown of infrastructures and institutions. In the case of Cape Town, it took—and is taking—the form of a combination of factors: An aging infrastructure; rapid population growth over the last few decades as economic migrants have

poured (or flowed, or flooded) into the city from the surrounding hinterland; a severe and largely unpredicted three year drought; and chronic political in-fighting within the ruling Democratic Alliance, and between the Democratic Alliance and the African National Congress [24–26]. This combination of social, political, economic and climatic factors delivered up a potent moment—an Anthropocene moment—when anxieties about the future and apocalyptic imaginaries meshed with conditions on the ground, falling dam levels, and the torrent of facts and figures reported in the news, and delivered up on websites like the City of Cape Town’s own “Water Dashboard”. The rhetorical power of the notion of Day Zero—a powerfully compressed metaphor containing within itself the idea of a countdown, the scene of a disaster (a ground zero), and an apocalyptic end-time (the end of days)—captured public and media attention and expressed the particular nature of the unfolding catastrophe [25,26].

3. Mad Max in Cape Town

One of the themes of many of these news reports—in fact, a hook for journalistic interest – was the prediction of chaos. Mad Max scenarios imagined a quick slide into anarchy as city residents battled one another for the scarce resource, or as local warlords and gang leaders seized control of waterpoints and extorted money from city residents. On 22 January, Helen Zille, the Premier of the Western Cape province which includes Cape Town, and thus the highest-ranking local politician, wrote in the popular online news site, *The Daily Maverick*: “The question that dominates my waking hours now is: When Day Zero arrives, how do we make water accessible and prevent anarchy?”. She continues: “As things stand, the challenge exceeds anything a major City has had to face anywhere in the world since the Second World War or 9/11. I personally doubt whether it is possible for a city the size of Cape Town to distribute sufficient water to its residents, using its own resources, once the underground waterpipe network has been shut down” [27].

Indeed, the city’s contingency plans were not promising. Come Day Zero, municipal water would only be available at 200 points of distribution (PoD’s) across the city, where residents would need to queue for a daily ration of 25 liters of water per person. An info-graphic published in the *Daily Maverick* breaks down the numbers: 200 PoD’s to service a city of four million inhabitants means—assuming that some people make alternative arrangements—ten to fifteen thousand people could be expected to converge on each water point every day (Figure 1). It takes two to three minutes to fill a single 25-liter container. The queues would be endless, beyond imagination. Some people would be filling up on behalf of their families. This creates the practical problem of shifting fifty to a hundred kilograms of water. Identity checks would need to be in place at the PoD’s to prevent water fraud, entailing further delays. Vehicle traffic in and out of the PoD’s would be hellish. For those reliant on public transport—the majority of the city’s population—there would be a different kind of hell. Without flushing toilets and running water, and with residents spending hours each day queueing at PoD’s, schools and businesses would need to close. The functioning economic life as is known in the city would cease to exist or would be severely curtailed. Without a functioning water-borne sewerage system, and with limited water for washing, the risk of epidemic diseases would be vastly increased. Outside of the war zones or scenes of natural disaster, this was an almost unimaginable scenario [25,26].

In any normal city, this would present city managers with prodigious logistical challenges, but this is Cape Town, and Cape Town is far from being a normal city. Stated baldly, Cape Town is one of the most divided, disjunctive and unequal cities on the face of the planet. At this point, it becomes necessary to sketch a tale of two cities, beginning with some statistics. According to *Census 2011*, in the most recent census carried out in South Africa, Cape Town had 1.068 million households. Of these, 129,918 households, or just over 12%, lived in informal structures, that is, shacks made of corrugated iron and salvaged materials. Nearly 36% of households lived below the poverty line of less than ZAR 3500 (approx. USD 250) per household per month. Further, 13.7% of households reported no income at all. With regard to water, 97.3% of households were dependent on a regional or local water scheme (that is, municipal water). Approximately 10% of households did not have access to a flush toilet (the alternatives are listed as chemical toilet, bucket toilet, or none known) [28]. According to the State of

Cape Town Report 2016, in the most recent comprehensive report on the city, the number of households had risen to 1.26 million. The number of households living in informal housing had risen to just under 20% (up from 12% in 2011). Youth unemployment in the city is estimated at between 45–46% [29].

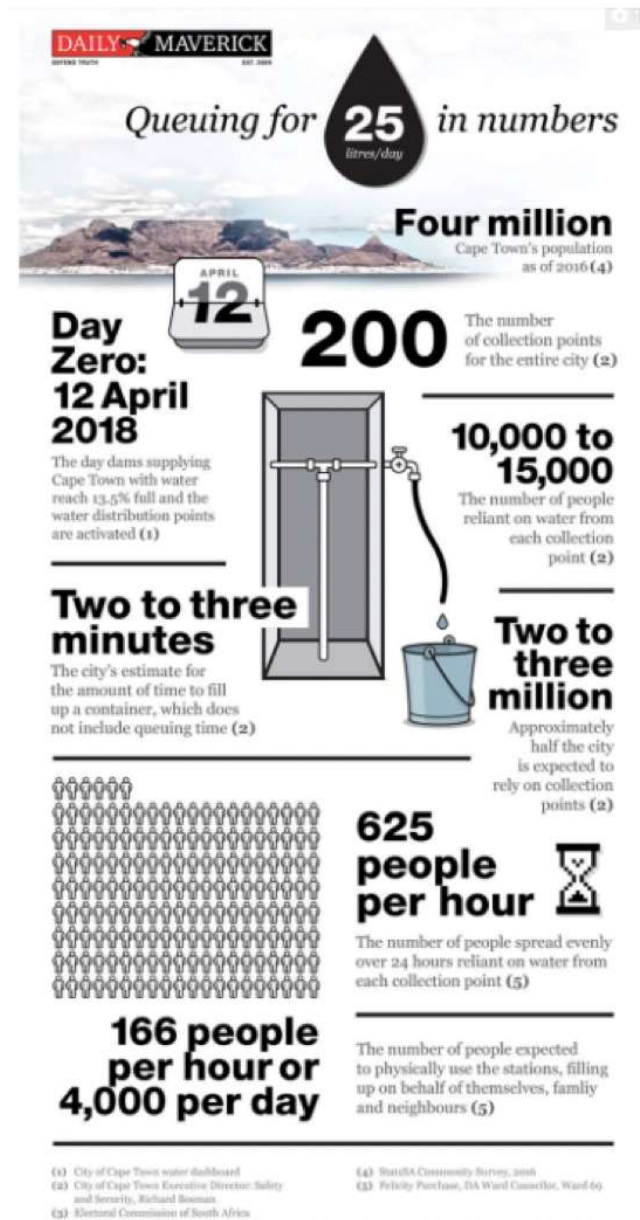


Figure 1. Breaking down the numbers for “Day Zero”. Source: *Daily Maverick*.

On 7 March 2018, *BusinessTech* reported that Cape Town is the 15th most violent city in the world [30]. This is according to a study published by the Mexican Council for Public Security and Criminal Justice (most of the world’s most violent cities are in South America). The good news is that Cape Town had improved its position from 2016/17 when it was the 13th most violent city in the world, and from 2015/16 when it was listed the 9th. The bad news is that in terms of absolute numbers of homicides per year, as opposed to the murder rate per 100,000 residents, Cape Town currently stands third in the list of the fifty most violent cities globally, with just two cities reporting a higher absolute number of homicides in the year 2017/18: Caracas in Venezuela, and Fortaleza in Brazil. By these figures, Cape Town is the most violent city in all for Africa, Asia and Europe [26].

Then, there is the other face of Cape Town, a city of opulent living conditions and extraordinary natural beauty, keyed-in to global tourism circuits and real estate markets. The Knight Frank Prime Global Cities Index “enables investors and developers to monitor and compare the performance of prime residential prices across key global cities”, measuring the top-5% of the housing market. According to the Knight Frank Index for the second quarter of 2017, Cape Town was the ninth most profitable city in which to invest in real estate, ahead of Melbourne, Paris and Hong Kong, and behind Berlin [31]. According to a report published in the *City Press* in July 2016, Cape Town has the world’s second highest seasonal fluctuation of US-dollar multimillionaire populations in the world (after the Hamptons in New York) [32]. In 2014, *the New York Times* declared Cape Town the best place in the world to visit [33]. In 2016, *The Telegraph* published “22 reasons why Cape Town is the world’s best city”, based on a poll of *Telegraph Travel* readers [34]. In fact, for the five years leading up to 2017, *The Telegraph* readers had consistently voted Cape Town Britain’s top travel destination.

These statistics paint a picture of a city not so much divided, as schizophrenically at odds with itself. The subjective experience of dwelling in Cape Town is of a city that remains overwhelmingly racially divided, where extraordinary wealth exists side-by-side with abject poverty and scenes of bare life. The spatial layout of the city remains the urban plan of apartheid residential segregation, with an overlay of loosely-regulated development and runaway property speculation post-1994. There appears to be no other city with such starkly contrasted scenarios, vistas and living conditions: The stately homes of Constantia and Bishopscourt, the seaside villas of Clifton and Camps Bay, the windswept shacklands of Khayelitsha, and the dystopian ganglands of the cynically-named Lavender Hill and Ocean View [35]. Certainly, Cape Town’s spectacular natural worlds, its unparalleled beaches and the stately magnificence of Table Mountain, serve to compound this sense of disjuncture, when held up against the social misery that is the ineluctable other face of the city. In Cape Town, perhaps more visibly and viscerally than in other parts of South Africa, race and class coincide, so that the constant, daily reminders of white wealth and black poverty underscore this sense of disjuncture. Additionally, in Cape Town, perhaps more so than in other parts of South Africa, contemporary social injustices are often rooted in deep historical injustices. From the moment of the rounding of the Cape in the late-fifteenth century, and the establishment of a settlement by the Dutch East India Company in the mid-seventeenth century, the litany of Cape history has included the genociding of the Cape San (the indigenous people of the Cape); the establishment of a brutal slave economy under the Dutch; both Dutch and British colonial orders; and, in the mid-twentieth century, the establishment of institutionalized apartheid [35]. In the 1960s and 1970s, urban forced removals displaced in excess of 100,000 black and coloured residents of Cape Town, ripping apart functioning working-class communities like District Six, and turning the city into a patchwork of racially segregated residential areas [36]. As in other parts of South Africa, white Capetonians emerged as the beneficiaries of such policies.

The theme here is not that of South Africa’s, or Cape Town’s, exceptionalism, but rather the opposite: The sense that in Cape Town, a set of dynamics, forces and social and economic trends that are present in many cities in the world, are presented with an unusual directness and intensity. Jacques Derrida first makes the case for this notion of intensification in relation to South Africa, in an essay called “Racism’s Last Word” published in the mid-1980s, at the height of apartheid repression [37]. Derrida argues that apartheid in South Africa is the recognizable outcome of a set of social and political forces present in Europe’s own history: Authoritarianism, fascism, and racism. “What is South Africa?” asks Derrida. His answer is that it is a “concentration of world history”. He writes: “we might be tempted to look at this region of the world as a giant tableau or painting, the screen for some geopolitical computer. Europe, in the enigmatic process of its globalization and its paradoxical disappearance, seems to project onto this screen, point by point, the silhouette of its internal war, the bottom line of its profits and losses, the double-bind logic of its national and multi-national interests” [37] (pp. 36–7). This sense of intensification makes Cape Town a useful prognosticator of future trends and developments, a kind of crucible of the past and future. Living in Cape Town, as the author did on-and-off from 1985 to 2017, there was the sense of living in the midst of a vast social experiment, one

whose outcome is uncertain. This makes for stoicism and fatalism, but it also makes for something else: Black humour, irony, and a peculiar intensity to the pitch and sensation of everyday life that it is difficult to be replicated elsewhere. More immediately, it makes for a city characterized by simmering social, political and economic tensions and a deep sense of historical grievance [35]. Nixon and Chakrabarty both make the point that the added pressures of Anthropogenic environmental change are likely to deepen and entrench already existing social, economic and political fault-lines in impacted cities and communities. It is no wonder so many commentators were predicting anarchy come Day Zero.

4. Water as Social Leveller

In fact, from the beginning there was another, different scenario present in the reports on Cape Town's water crisis. This second scenario was present, not so much in the words of the reports, as in the images that accompanied these words. Many of these images were of people standing in line, patiently waiting to fill plastic containers with water from the natural springs that occur in many places in the city. Table Mountain acts as a giant sponge, and many of these springs—located on the side of the road, or down a suburban street—are the result of upwelling. The springs have been known about for centuries and are part of the fabric of the city [24–26]. They are tapped by industries, like the large South African Breweries site in Newlands, and by the city residents who either do not have a water source of their own or are eager to access a more natural alternative to municipal water (although the quality of municipal water in Cape Town is generally excellent). In the years in which the author lived in Cape Town, the author would routinely collect water from these springs, using 25-liter plastic containers in the back of my truck (or bakkie) for the purpose. Now, from being an alternative lifestyle supplement, these springs had become a necessity to many residents, eking out their daily 50-liter ration, or stockpiling water for the hard times ahead.

The photographs accompanying many of the news reports were mainly taken at three sites: The South African Breweries spring off Main Road in Newlands, the spring on the side of Main Road in St James, and the spring at the end of Spring Street off Kildare Road. The image of Cape Town residents queueing at the springs became a visual trope for the crisis as a whole. A part of the fascination of these images is the inter-race, inter-class nature of the queueing multitudes: White, middle-class matrons from Constantia; black and coloured workers from a nearby construction site; a black domestic worker on her lunch-break; businessmen in suits and ties; a township entrepreneur filling a bakkie with containers of water to sell (Figures 2–4). As images, they reference and recall another New South African visual trope, the image of patient queues of people waiting to vote in the country's first democratic elections in 1994. For South Africans, such images resonate strongly. As with other highly segregated societies, there tend to be very few occasions where people meet casually in the public sphere across race and class lines. These images suggest a different meaning of water and another possible scenario, not water as scarce commodity that precipitates a Mad Max-style resource war, but water as social leveller [24–26].

For many residents of Cape Town's townships and informal settlements, the experience of queueing for water is nothing new. On 29 January 2018, the national Water and Sanitation Department announced that more than five million South Africans do not have reliable access to drinking water (out of a total population of around 56 million people), according to a report published by *EyeWitness News* [38]. The same report notes that an estimated 14.1 million people do not have access to safe sanitation. According to the Statistics South Africa's 2016 General Household Survey, less than half of South African households (46.4%) have water piped in their homes. Further, 26.8% of households have water on their property (usually an outdoor tap), while 13.3% need to share a communal tap [39]. Over the decades, Cape Town's city managers and wealthier residents have shown little political will to address the plight of the city's poorest and most vulnerable residents. Perhaps the water crisis would achieve what South Africa's Mandela-inspired "rainbow nation" rhetoric has so signally failed to achieve in the quarter-century following the end of statutory apartheid: Bonds of empathy and solidarity that cross race and class lines, and that draw South Africans together to find a common

future. Perhaps this is what it takes. An embodied sense of being together in a shared crisis, having to rely on the person behind you in the queue to help you with your unwieldy container of water, or reaching out to help the person in front of you.



Figure 2. Spring Street, Newlands, March 2018. Source: Dirk-Jan Visser.



Figure 3. Spring Street, Newlands, March 2018. Source: Dirk-Jan Visser.



Figure 4. Spring Street, Newlands, March 2018. Source: Dirk-Jan Visser.

The idea of water as a social leveller raises intriguing possibilities that strike at the heart of some core South African dilemmas. In an interesting twist, city managers announced that come Day Zero, piped water to communal taps in the city's townships and informal settlements would continue to flow, even as water supplies to the suburbs would be turned off. Would this send Cape Town's wealthier residents into the city's informal settlements, places they would normally shun? Would access to water invert accustomed relationships between the city's haves and have nots? Informal accounts reported widespread water hoarding in early-2018, especially amongst the city's wealthier households. The sales of bottled water surged, and some retailers introduced 20-liter containers of bottled water, something not before found in stores. Interesting existential questions arise off the back of such scenarios. In times of crisis, such as Cape Town's water crisis in early-2018, should faith be placed in high walls, electrified fences, and private stockpiles of water, such as many of Cape Town's wealthier residents were doing? Could the wealthy rely on their relative wealth to see them through the crisis, as it had through the social and political upheavals of the past decades? Or would the people be better off pursuing a different strategy, putting their faith in a developed social network, offering favours and expecting favours in return, relying on friends and neighbours to advise when the queues are the shortest, or which shops still stock water? There is something foundational about such questions. They speak to the very basis of our understanding of society, and are sure to become more pointed and more relevant for the rocky road ahead [25,26].

5. Day Zero Deferred

Up to this point, the story of Cape Town's water crisis is not so much a slow catastrophe as a rapidly accelerating one, with a recognizable plot: A city held hostage by a critical shortage of potable water, the predictions of anarchy, and the scramble by citizens to make do. Then, suddenly, the message changed. On 7 March, Mmusi Maimane, the national leader of the Democratic Alliance (DA), the governing party in the Western Cape and official opposition to the African National Congress, called a press briefing at the DA's Cape Town office. Calling the city's residents "Day Zero heroes", and surrounded by six flat screens reading "Act Now. We Must #DefeatDayZero", Maimane said that he had "some encouraging news for the drought-stricken city". He announced that "Day Zero will not

occur in 2018” [40–42]. Underlining the surprising nature of this announcement, “the party admitted that it had not yet informed the national water department about its prediction that Day Zero will not occur in 2018” [42]. At this point, some of the statistics need to be reviewed. In early-January, when Mayor de Lille made her dramatic Day Zero announcement, the dam levels stood at 28.7% of capacity. On 6 March, the day before Maimane’s announcement, the dam levels had dropped to 23.6%. No rain had fallen in the intervening months. In fact, following Maimane’s announcement, it would be nearly two months before any appreciable rain fell in Cape Town (in late-April), and it would be fully three months before the long-anticipated winter rains finally arrived. In the mean-time, the dam levels continued to fall.

Thus, while up to this point the event has been told via the technical detail of rainfall statistics and dam-level reports, the role of other factors in social responses to catastrophic events need to be considered. Clues appear in the language used in this and other reports originating from the DA around this time. In his briefing of 7 March, Maimane is reported as saying that he was not satisfied with the way the city has responded to the crisis: “Many residents blamed the DA, and as Cape Town is a DA government, it was important that I intervene to ensure that residents received the level of service and honest government that they expect from the DA” [41]. On 12 March in a column published on *News24*, an online news site, Helen Zille said: “The idea of Day Zero hovering on the horizon has had a major effect on the big pillar of our economy, tourism. Visitors stay away from a city at risk of running out of water. Many also cancel their bookings. And this has a knock-on effect through the entire pipeline of tourism offerings. We simply cannot afford to lose jobs . . . ” [43]. Here, is Maimane again, as reported by the *Mail and Guardian*: “Cape Town and the Western Cape are open for business” [42]. In a column written on 19 March, journalist Melanie Gosling wrote: “The decision to scrap Day Zero has left many residents confused. One day it was hovering on the horizon, the next it was gone. Yet the dam levels are still dropping, there has been almost no rain . . . Trawling through statements, opinions and conversations with people from different sectors, it appears that the decision was political, designed to limit the negative impact on tourism and investment in the city” [44].

Maimane’s political gamble paid off when winter rains topped-up dam levels, and forestalled the collapse of the city’s water infrastructure. By late-June, the dam levels had risen to 42.7%. However, there was a second crucial factor in the events around Day Zero and its deferment—a widespread change in behaviour. In a widely-quoted set of figures, the average daily water consumption in the city dropped from around 1.2 billion litres per day in February 2015, to between 510 and 520 million litres per day (MLD) in early 2018, at around the time of Maimane’s announcement, a drop of almost 60% [24,41]. Robins notes that this drop in consumption is especially significant when 70% of the water usage in the city is residential. In other words, the saving in water consumption was achieved at the level of the individual household, as the result of a widely-shared set of behaviours. By early-October, the dam storage stood at 76.2%, and average daily water usage in the city was around 546 MLD. Day Zero had been averted, at least for the time being.

6. The politics and Poetics of Water in the Anthropocene

A considerable amount of the discussion on Anthropogenic environmental change focuses on water: Too much water, too little water, melting ice, rising sea levels. In fact, it might be said that water—along with fire—is one of the elemental languages through which Anthropogenic environmental change expresses itself. It was always going to be about the water. Water-focused research is a burgeoning area of study. Some of the most engaging work in this expanding field understands fresh drinking water not simply as an inert resource, but rather as a complex object constructed at the intersection between natural systems, cultural imaginaries, and social, political and economic forces and considerations. Jamie Linton writes of the development of “modern water” as a way of knowing water based on its “abstract, metric identity” [45] (p. 13). He writes: “One virtue of modern water is that it is not complicated by ecological, cultural, or social factors. This has made it relatively easy to manage. Another virtue of modern water is its universality—all waters, in whatever circumstances they may

occur, are reducible to this abstraction" [45] (p. 8). He continues: "The business of fixing water, in other words, is hardly just an intellectual performance; in each instance, it allows for certain hydrosocial realities while making it difficult or impossible for others to spring to life" [45] (p. 13). Graeme Wynn writes: "Developing a quantitative view of water was part of the process that enabled science, in the words of German philosopher Martin Heidegger, "to pursue and entrap nature as a calculable coherence"" [46] (p. xiii) (Heidegger 1977: 183, in Wynn 2010: xiii). Nikhil Anand's study of the water supply in Mumbai considers the many social, political and infrastructural factors needed to keep water flowing in the city. He develops a notion of "hydraulic citizenship", which he defines as "a form of belonging to the city enabled by social and material claims made to the city's water infrastructure" [47] (p. 545). Kirsten Hastrup and colleagues writes about the agentive power of water to impact on social worlds, constructing what she calls "waterworlds" [48]. Astrida Neimanis develops a posthuman feminist phenomenology of water, understood as a transcorporeal agent in colonial and decolonial worlds. She writes: "Colonialism is carried by currents in a weather-and-water world of planetary circulation, where we cannot calculate a politics of location according to stable cartographies or geometries . . . These waters gather and distribute the liquid runoff of a global political economy and techno-industrial capitalism that produces vastly divergent body burdens, but which nevertheless gathers us all" [49] (pp. 36, 40).

In early-2018, working with a group of junior colleagues, the author started a research project at Aarhus University on "The Politics and Poetics of Water in the Anthropocene", focused on the unfolding events in Cape Town. In part, this draws from the author's own research biography where the author has written extensively about the city, usually from the perspective of questions of history, memory, representation and social justice [50–54]. The events of Day Zero gather up many of these themes, but reframe them in interesting ways by situating them in relation to natural systems and climatic events. Like Chakrabarty, the available social theory is only just beginning to grapple with the implications of these new, emergent conjunctions. The author comes from an intellectual background—Marxism, Feminism, postcolonial theory, decolonial thinking—which is intensely skeptical of what it terms environmental determinism. The social constructedness of the past, present and future is almost an article of faith for such approaches, opposed as they are to attempts to naturalize racism, sexism, and unequal social arrangements. However, society stands at a novel historical conjunction, which challenges such articles of faith and asks fundamental questions to rethink the relationship between nature and culture. Following Latour [55], questions of agency become more complexly entangled in the Anthropocene, as the agentive power of water, weather and infrastructure is considered. Following Chakrabarty, one of the challenges for scholars of a certain generation is the challenge of learning to unlearn, as the decolonial thinkers put it. In his 2009 climate change essay, Chakrabarty makes an extraordinary admission. He writes: "As the crisis gathered momentum in the last few years, I realized that all of my readings in theories of globalization, Marxist analysis of capital, subaltern studies, and postcolonial criticism over the last twenty-five years, while enormously useful in studying globalization, had not prepared me for the making sense of this planetary conjunction within which humanity finds itself today" [4] (p. 199). He goes on to wonder what it will mean to think and practice, as he puts it "under the cloud of the Anthropocene" [4] (p. 212).

One of the starting points for this project is an interest in Anthropocene futures, and an idea, shared by many commentators, that events in Cape Town open a window to the future to the extent that they begin to suggest what happens when the stresses of Anthropogenic environmental changes are mapped onto complex social and political situations (for example, see Newkirk 2018 [56]). Do new forms of empathy and solidarity emerge out of moments of crisis like Cape Town's brush with Day Zero? Or is the opposite expected, the breakdown of social systems? And what tips the balance between the two? Allied to this interest is an attempt to forge a new kind of conceptual language through which to attempt to grasp the full meaning of the events around Day Zero, and the changing social meanings of water as a once taken-for-granted resource becomes something else: A cherished

necessity for life itself. Following is a set of field notes based on the events around Cape Town's Day Zero, and the new hydrosocial realities that they reveal.

7. Field Notes from the Future

7.1. *Objective and Subjective Relationships to Water*

A societal relationship to water needs to be understood in both its objective and subjective aspects. There is a substantial literature focused on the questions of water policy, management and infrastructure, and on the macro-politics of water in southern Africa (for recent examples see Harris et al. [57], Fallon 2018 [58]). The events in Cape Town reveal a second, more intimate, embodied and subjective aspect of our relationship to water. They also speak of the micro-politics of water in everyday life [25,26]. A host of questions come to the fore. What are the social meanings of water, and how do these change in times of shortage? What new forms of value emerge? What imaginaries of water come to the fore? Surviving on fifty liters of water a day requires careful management when this needs to cover all of one's needs: Drinking, cooking, cleaning and flushing. The common middle-class household practice during Cape Town's water crisis involved taking a quick shower standing in a plastic tub to catch the run-off, then using this water to wash clothes or flush the toilet (usually limited to a single flush per day). An NBC-News report that appeared at the height of the Day Zero crisis quotes 26-year old Sitara Stodel: "I'm constantly thinking about running out of water and worrying about Day Zero. I'm even having nightmares about wasting water. The other day I had a dream that I took a long shower by mistake" [59].

7.2. *Anthropocene Vernaculars*

The debate around the Anthropocene has tended to be conducted as a matter of high theory, by researchers based for the most part in the global north. In the events around Cape Town's Day Zero, it was fascinating to see how core Anthropocene concepts and concerns were translated into everyday terms, and became the substance of casual encounters and dinner-table conversations [25,26]. Anthropologist Steven Robins calls this water-talk, and notes that it became an integral part of the events around Day Zero [24]. This water-talk often involved surprisingly detailed technical knowledge of water policy and management. People followed information on the dam levels and daily water consumption closely, and could quote statistics back at you. For its part, the City of Cape Town published a weekly, online water dashboard which broke down the statistics via a series of graphs. In January 2018, the City published an online, interactive city water map which showed the average water consumption at a household level via a series of colored dots. This informal means of surveillance meant that householders could monitor the behavior of their neighbors, and single-out the water wasters from the Day Zero heroes.

7.3. *The Entanglement of "Nature" and "Culture"*

A core argument of the debate around the Anthropocene in the work of Latour, Chakrabarty, and others, concerns the entanglement of nature and culture. Even at this early stage of analysis, it is clear that both the crisis and the post-crisis moments in Cape Town's Day Zero were produced at a complex point of intersection between the climatic, social, political and economic factors. Rather than being a climatic event that elicited a technical response—as imagined that such shocks and crises would play out—Cape Town's Anthropocene moment was, and continues to be, a more layered event. It is argued that future Anthropocene crises are likely to be socially, economically, politically and culturally entangled and mediated in similar ways [25,26]. In the Anthropocene, perhaps more than ever before, empirically-based scientific knowledge can be entangled with the forms of discourse and the systems of meaning and value as natural-world facts and events strike deep into the domain of culture. On the one hand, this points to potentially exciting new knowledge conjunctions and collaborations. On the

other hand, it points to the outmoded nature of current disciplinary configurations, and the urgent need to catch up.

7.4. *The Unthinkability of Climate Change*

Slavoj Žižek has an interesting line on Anthropogenic climate change. He writes (in paraphrase): “We know it, but we don’t believe it” [60]. One of the most important and perceptive interventions on the unthinkability of climate change is Amitav Ghosh’s *The Great Derangement* [61] in which he tracks the rise of the modern novel, with its depiction of stable, bourgeois worlds and the calm passion of daily life. This prompted Ghosh to describe the crisis of the Anthropocene as being, in part, a cultural crisis, or a crisis of forms. There is nothing in society’s cultural apparatus that equips people to think about abrupt discontinuities, ruptures, and the derangement of nature. These events belong in the realm of discredited forms, science fiction or gothic horror.

Confronted with a barrage of statistics and reports on Anthropogenic environmental change, it has become common to encounter the sentiment: But where do I begin? How do I make a difference when the scale of the challenge is so vast? One of the interesting aspects of Cape Town’s Day Zero was that it translated such large-scale and intractable challenges down to the level of the individual household. Not only was Anthropogenic environmental change immediately perceptible, but doing something about it was as immediate as the decision not to flush, to re-wear a shirt, or to let your hair go another day between washes. There is something empowering about such a realization. After so much uncertainty and helplessness, it comes as a relief to know where to begin.

7.5. *Survivalist States*

What does it mean to live in a survivalist state? While for many people daily life is a matter of survival, for most middle-class households this is a new and uncomfortable state of being. Extrapolating from Ghosh [61], to a very great extent, middle-class life has been constituted around insuring against risk and managing future outcomes. These horizons and expectations begin to break down in the face of the shocks and crises of the Anthropocene. In Cape Town, it was interesting to see how, at an early stage, the realization set in that the state was unlikely to intervene in a decisive way to rescue the situation, and that the responsibility devolved to the individual households [25,26]. Social media sources were full of suggestions for everyday technologies and hacks, to recycle grey water, or to transport heavy 25-liter containers of water [24,25]. Innovation and improvisation were the order of the day, as was the idea of living with uncertainty. Survivalism—promoted by real or imagined threats—would seem to be an ambiguous and double-edged state of being, as manifested in the academic literature on the subject. However, it may be useful and even inescapable for the journey deeper into the Anthropocene.

7.6. *Changing Behaviors*

One of the most important take-aways from the events around Cape Town’s Day Zero was the widespread change in behavior evidenced in the people’s reduced consumption of water. Described as unprecedented, the collective drop in consumption was remarkable. By comparison, at the height of its drought in 2015, California residents achieved a 27% reduction in water consumption, and in response to their Millennium Drought, Melbourne residents took 12 years to reach a similar percentage reduction to that achieved by Cape Town residents in 2018 [24–26]. It was this, rather than any action on the part of the DA or the City of Cape Town that averted the collapse of the city’s water infrastructure, Maimane’s statements notwithstanding. In part, the reduced consumption is likely to have been the result of increased tariffs and surveillance. However, the decisive factor appears to have been the manner in which householders internalized the risk and acted decisively to reduce consumption. This social mobilization is all the more remarkable for having taken place across lines of race and class in a historically divided city. There is some attention to changing behaviors in the debate around the Anthropocene (for example, see Jones et al. 2013 [62], however, it is anticipated that this important

topic will become more central in years to come. Indeed, in an entirely personal way, each of us will be confronted soon—or has already been confronted—by the urgent need to change our patterns of consumption as an ethical and political concern under the cloud of the Anthropocene.

7.7. Defense of the Commons

Michael Hardt and Antonio Negri write: “By the “common” we mean, first of all, the common wealth of the material world—the air, the water, the fruits of the soil, and all nature’s bounty—which in classical European political texts is often claimed to be the inheritance of humanity as a whole, to be shared together . . . Neoliberal government policies throughout the world have sought in decent decades to privatize the common . . . ” [63] (p. vii). In March 2018, Cape Town was alive with rumors: The City of Cape Town was using the water crisis as an excuse to raise tariffs and to force the privatization of water which, in South Africa, remains largely in municipal hands. There were signs that this was indeed the case [24]. Certainly, the crisis was being seen by some as a moment of opportunity. The retailers were quick to exploit the market demand for bottled water, and developed new forms of packaging which allowed consumers to buy water in large volumes. One of the most remarkable Day Zero stories concerns Riyaz Rawoot, the water master, who informally adopted and managed the freshwater spring in Spring Street. When we visited Spring Street in March 2018, a whole careful ecology was in operation, via an intricate system of PVC pipes, special queues for the elderly, and trolley operators who would transport your water for a small fee. As told by Steven Robins, a few weeks after our visit, the City of Cape Town closed down Riyaz’s operation and poured concrete over the source of the spring [64]. It appears that such uncaptured and unmonetized sources of water were perceived by city managers as a threat, even as Cape Town faced an unprecedented shortage of potable water.

7.8. The role of Social Movements

With much at stake, and with a strong tradition of social activism in South Africa, it is perhaps inevitable that water-focused social movements would organize around Day Zero. Groups like the Water Crisis Coalition mobilized to pressure the city to lower tariffs, to oppose the use of the controversial and inefficient water management devices (WMDs), and to demand transparent and accountable governance. In the context of a low-trust environment with a comparatively weak state, social movements play an important role in producing a notion of active citizenship. This form of active citizenship was arguably a key factor in the events around Cape Town’s Day Zero, as citizens absorbed the message, and took matters into their own hands [25,26]. Like the notion of survivalist states, a notion of active citizenship becomes useful in thinking about how populations adapt to the stresses of Anthropogenic environmental change. It becomes interesting to speculate that these forms of social resilience may be more accessible to populations in the global south, accustomed by long experience to shocks, crises, and taking matters into their own hands, than to their counterparts in the more settled environments of the global north who tend to look to the state to solve infrastructural and other challenges.

7.9. Water as Heritage

How will we tell the story of water in future years? Perhaps, it will be said that for a brief moment in human history, for a privileged few, it was a taken-for-granted fact of everyday life that a tap turned on and the water would flow? Or we could describe how piped, potable water became one of the indexes of modernization, just as in previous eras the control of water had been the foundation of civilizations. Then, the rest of the story would need to be told on how this brief flourishing was truncated by the harsh new regimes of the Anthropocene. According to the United Nations World Water Development Report of 2018, water shortages could affect 5 billion people by 2050, with likely “conflict and civilizational threats” [65]. It seems clear that water has to be valued differently. Rather than thinking about water as a right, or as a resource, or as a commodity, perhaps clean drinking water

should be thought of as a precious heritage, to be held in stewardship and handed down to children, and to their children. The story of the earth's water is remarkable and uncanny. Delivered to a dry earth by asteroids, individual water molecules have been cycled through the earth's natural systems and through every form of life, only now to be filtered through our carbon civilization and through our own bodies. If there was ever a case for the entanglement of natural heritage and cultural heritage, then water most eloquently presents it [26].

7.10. *Empathy and Anthropocene Futures*

Taking a leaf from Mike Davis's (1990) brilliant excavation of the future in dystopian 1980s Los Angeles, it is possible to view the events in Cape Town as opening a window onto the future of the Anthropocene [66]. The question might be framed as follows: What happens when the added stresses of Anthropogenic environmental change are mapped onto already contested social, political and economic situations? In the case of Cape Town, this remains an open question. Day Zero has been deferred for now, but the specter of drought haunts the city. By some reports, southern Africa is a climate change hot spot, with an expected average temperature rise roughly twice the global average [67]. It is common in the literature to see Anthropogenic environmental stress referred to as a magnifier, exacerbating already existing tensions, but the events in Cape Town suggest other possible outcomes: The emergence of new forms of solidarity, improvised solutions, and modes of active citizenship.

To a significant extent, Cape Town's Day Zero was a middle-class crisis. At the height of the Day Zero events, the township dwellers were heard to say that they would count themselves fortunate to have access to fifty liters of clean water each day. The idea of fifty liters of water per day remains an aspiration for many of Cape Town's poorest residents, as does access to a flushing toilet. However, rather than detracting from the seriousness of the events in Cape Town, if anything, this underlines them. Globally, the future shocks of the Anthropocene are expected to strike nations, classes and bodies differently, depending on their levels of wealth and forms of governance, as well as on accidents of geography. Very little of this will be fair, as the already under-developed territories of the global south and vulnerable populations everywhere find themselves most at risk [5]. Entanglement is not the same as empathy and connectedness. People are all in this together, but some are more in it than others, in the sense that some will pay a disproportionately higher cost as the world warms. A central question is whether the forms of empathy are able to be found, that is, the forms of empathy that allows a common human future. The alternative, as Christian Parenti points out, is the "politics of the armed lifeboat" in a dog-eat-dog world in which those with means scramble for survival at any cost.

In March 2019, exactly one year after the high-point of the events around Day Zero, the author visited Cape Town. For the moment, the dams supplying the city are comfortably full, and talk of Day Zero has receded. Indeed, the focus of attention in early-2019 has shifted to another infrastructure—electricity supply—and the failings of ESCOM, the state power utility. At the same time, everyone that the author spoke to—friends, family, colleagues, city officials, activists—understand that the water crisis is not over. In part, the geographical focus of attention has shifted, with some small towns in the interior experiencing severe droughts over the summer, and rivers running dry for the first time in living memory. The narrative of the slow catastrophe shifts, complicates, draws in other factors, even as the general drift and direction of the narrative is not in doubt. Water flows, seeps and pools. It travels upwards against the force of gravity. Full of surprises, it is at the same time utterly commonplace. It seems clear that society is entering an ambiguous new phase in human history, in which many of the old certainties fall by the wayside. New metaphors, new metrics, new disciplines, new forms of analysis, a whole new language, are needed to describe these new realities. For scholars, there are many ways of reaching for this new language. For me, for now, I am going to follow the water.

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