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Cape Town's "Day Zero" water crisis: A manufactured media event?

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ABSTRACT

Day Zero was a purposefully designed narrative in political communication to change middle-class water consumption behaviour in a highly visible metropolitan context of persistent drought. As an "affective fact", however it didn't so much elicit panic, but elicited a sense of fun and social solidarity in many.

The unfeasibly precise prediction of water 'running out' the campaign obscured scientific uncertainties. In this context the contribution considers the role of 'public' scientists as highly visible authorities reinforcing or nuancing the Day Zero narrative. While the crisis narrative inevitably showed up rifts in South Africa's social fabric, and triggered protests against an underlying everyday crisis of water penury for marginalised urbanites.

Our perspective is informed by documentary and press analysis, as well as a Focus Group Discussion with the South African National Press Club held on October 31, 2019.

"We live in times when what has not happened qualifies as front-page news" [1].

1. Introduction

Cities running out of water is a compelling narrative, and it is not uncommon to hear that São Paulo, Chennai and Cape Town were close to reaching (or had even reached [2]) Day Zero – the day the water would "run out". However, Day Zero never happened; it was a disaster foretold; an event carefully constructed to be a self-denying prophecy.

Water (in)security is not merely a scientific concept but also one that lends itself to interpretivism and construction: "water scarcity (…) is not physical or natural, but rather a socially constructed one, stemming from a set of social processes that reflect the conflicts concerning the desirable kind of society and social order. socially constructed one, stemming from a set of social processes that reflect the conflicts concerning the desirable kind of society and social order" [3–5].

Even without any fatalities and material destruction, a situation can be represented as a disaster or crisis in the press or the political arena. Urban drought crises, such as those in São Paulo, Chennai and Cape Town in recent years, are examples of such widely broadcasted emergencies without immediate casualties. The manufactured event even earned an international label: "Day Zero". This doomsday was pronounced to be 12 (or 21) April 2018 for Cape Town. While this deadline has seen changes over time, that label has a remarkable degree of precision, given the uncertainties involved. In marking the date with this level of precision, pre-emptive extraordinary action in the present seems legitimised; the Day Zero doomsday clock created an "affective fact" [1].

We seek to understand how the drought came to be experienced as an impending disaster. Our research specifically focuses on the *mediatization* of the drought. Clichéd images of parched earth, almost empty dams and withering crops abound in reporting on drought, but urban drought in a major city appears to carry a special cogency. In this article, we compare what Millington and Scheba [6] have called the 'anticipatory apocalyptic framings' and dire predictions of authoritative voices in media and mediagenic science with what Day Zero was actually supposed to mean, and how it was received.

While building on Ziervogel's [21] charting of the "production" of Day Zero by the City of Cape Town (CoCT), we zero in on some of its prophets of doom (and some of their detractors) - how media and "media professors" made the Day Zero narrative "land" as an event and gain traction, to understand how the media assisted in making the drought a *spectacle*. We do not seek to praise or condemn, but rather highlight and reflect on its workings.

How did the media view its own role in constructing this event? To find out how the sector itself understood its own role, we zoomed in on press coverage of Day Zero in South Africa – and found instances of narratives of solidarity as well as apocalypse. We held a thematic Focus

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Group Discussion with the South African National Press Club in Pretoria on October 31, 2019. The Press Club has a solid reputation as a politically impartial and credible body of journalists covering the news. At our request, the National Press Club of South Africa gave an open invitation to its Pretoria branch members. We did not target specific journalists, but rather sought views from journalists working in several media outlets as our focus group. The session hosted 15–20 participating professionals, television and newspaper journalists, at least one of whom was also a former public communication officer. The journalists who attended represented current South African demographics. The event was enthusiastically moderated by a veteran Press Club member, who made sure that all present participated. As an experienced moderator, she used a topic list based on previous communication with the present authors on the thematic (sample topics: How to select between "disasters"? Was the press "played" by the City of Cape Town (CoCT)?), while we could ask follow-up questions as well. Participants agreed for the session to be recorded. We analysed their contributions to the discussion based on our own transcript.

In our review of Day Zero, we noted a prominent role for mediagenic South African academics, considered authorities on the matter. In a crisis, some voices become ubiquitous, due to their ability to deliver colourful soundbites and strong opinions through several communication channels, social media platforms included. For the purpose of this article, we chose those newspaper articles from academics and journalists that received considerable 'airtime' on South African national television. These academics also published considerably in the printed media and on social media outlets. These media-friendly experts not only analysed the causes and state of the situation and predicted "Day Zero" but some brought a very explicitly normative perspective. In so doing, while not all in agreement, they had a prominent voice in the framing of Day Zero. Hence, we decided to zoom in on their role in shaping Day Zero as an Event, consulting those academics' writings and pronouncements, often considered as the 'go to' opinion makers the media relies on.

Section 2 below provides a theoretical exploration of Day Zero as staged media spectacle. Section 3 sketches the background and run-up to the declaration of Day Zero. Thereafter, Section 4 inventories what Day Zero was intended to mean, when it was supposed to happen according to academics, and how it "landed" in tragic but also comedic incarnations. The article then looks at the response to the sudden lifting of the Day Zero warning in terms of "policy boomerangs". A conclusion ends the article.

2. Disaster and crisis as media spectacle

Emergency management responses do not map one-to-one to what disaster experts would call a disaster. The construction of an extreme Event ("catastrophisation") [7] makes it a highly symbolic policy and media event, at times in defiance of stark evidence, such as US President Trump declaring a State of Emergency over the 'border crisis' in 2019 [8].

Some risks receive much more attention than others – while some risks gets 'socially amplified', others are 'attenuated'. Amplification occurs both in the transfer of information about the disaster risk, and in the social response mechanisms; "social amplification stations" include "the scientist who communicates the risk assessment and the news media" [9].

The media play a key role in this amplification. Events drive reporting. As Bennett [10] notes, mass media favours the immediate and spectacular. It dramatises, accentuating "crisis over continuity, the present over the past or future, conflicts". It "downplays the big social, economic, or political picture in favour of the human trials, tragedies, and triumphs that sit at the surface of events".

People tend to turn to mass media for environmental information. "Slow catastrophes" like droughts, however, present a "problem of representation": unlike rapid-onset disasters like floods, hurricanes and earthquakes, droughts are not very mediagenic disasters. In slow-onset events like droughts, the 'clear and present danger' normally is not unequivocally present, and as a result they risk being neglected. To call attention, therefore, they need to be 'produced' and 'packaged'; a "strategy in which producers arrange and sequence a series of events to assign meaning to those events and impose coherence to the overall story" [12,13].

To understand its intended workings, we will look at literature on the spectacularizing and 'staging' of crisis. First, we turn to the work of Murray Edelman, the political scientist. Trying to understand how rulers rule, Edelman [14], defined "spectacle"[1] as a "discursive tool that political elites use to construct otherwise mundane events as 'crises' in an effort to justify government interventions (…) to legitimize elite interests, strengthen their power, pacify resistance, and delegitimize alternative explanations of reality" [13]. To most of us, he noted, politics is "a series of pictures in the mind, placed there by television news, newspapers, magazines, and discussions. The pictures create a moving panorama taking place in a world the mass public never quite touches, yet one its members come to fear or cheer, often with passion and sometimes with action" [15].

Edelman [14] defined a crisis as "a development that is unique and threatening". He identified three steps: "1. This event is different from the political and social issues we routinely confront, different from other crises, and it occurs rarely. 2. It came about for reasons outside the control of political and industrial leaders, who are coping with it as best they can. 3. The crisis requires sacrifices in order to surmount it."

Among the three types of crises Edelman identified one that is "created semantically and self-consciously by groups who engender widespread anxiety about an alleged threat that may or may not be real." [14: p.453). It is this crisis type we will refer to as a *manufactured crisis*. A manufactured crisis seeks to induce solidarity and behavioural change, while preventing a radical upset of the *status quo*.

Edelman [14] notes a crisis connotes an "emergency people must face together": mass acceptance of the crisis label, however ambivalently, is necessary to make people come together in solidarity. Rather than Hobbesian lawlessness, disasters tend to turn a mass of individuals into a social group to face a joint challenge. As Gotham (12: p.86) warns, "[p]roducers of spectacles are powerful agents of socialization but they are not omnipotent and monolithic. (…) the producers of spectacle can never totally constitute individuals as submissive and compliant." For this, the drought needed to be 'catastrophised' [7]. Emergency discourse attempts to portray as high politics issues normally thought of as low politics. For this, a situation is described as a survival issue to legitimize extraordinary measures.

The speaker of catastrophes will use narratives, framings, stereotypes and metaphors [16] that resonate within a specific cultural and social structure. Metaphors often use "alarmist" and "alarming" language [17]. Metaphors in public discourse are not created by chance, but based on mutual interactions with particular cultural and physical environments. These enduring interactions are in fact the empirical foundations from which metaphor can be understood. Metaphor is a powerful discursive tool for conceptualizing an abstract experience based on tangible experiences [18].

Legitimisation of extraordinary measures requires "the staging of existential issues in politics to lift them above politics … an issue is dramatized and presented as an issue of supreme priority …" (19: p.26).

[1] The concept of the "spectacle," introduced into 1960s sociology by Guy Debord [11], refers to the dominance of media culture, with its celebrities and scandals, permeating every social domain.

Drawing on Goffmann's [20] 'dramaturgical' analysis, Salter [22] shows the importance of the *setting* (who can speak, in what context, what counts as proof, what is heard) of an emergency story, that can 'play' to different audiences: "Any social scene, such as the setting of securitizing moves, involves the presentation of a self, the setting for that narrative, and audience reception." [22].

The strategy of jolting the population into change through a "staged" crisis in Goffmann's [20] sense was at the heart of Cape Town's communication strategy from January 2018, after earlier measures met with mixed success [21]. Rather than rationality, the spectre of "zero water" was aimed at the emotions–at bodily "affect" [1]. Affect is contagious when people imitate each other bringing about emotional convergence of people's experiences [23]. We will note, however, that not only an affect of dread was sparked, but also infectious humour and an outpour of solidarity.

Not only political authorities need to stage their drama, *scientific* impact "needs to be actively manufactured and (…) science has to be actively *staged"* [24]. Van Dooren and Noordegraaf [25] claim this staging appears to form a pattern: "… a few scientists become leading figures who "perform" publicly (…) Second, a few distinctive models and measurements have become dominant in the debate (…) Finally, there is a continuous stress on real experiences to link scientific data to *lived experiences* and the emotions they embody" (emphasis in the original). This staging, however, is a fragile process, as the adduced facts, even if they are "our friends" [66], can be shot to pieces, and predictions may not come true. As we shall see, they also resonated in unexpected ways.

3. Case background

South Africa is in an arid and semi-arid zone, with an average rainfall of 464 mm, yet it has a hydraulic development model for its food and energy sectors. It is therefore vulnerable to environmental risk and climatic extremes. Cape Town, with its 4 million inhabitants, is the second most populous city in South Africa, is a blue-green oasis in an arid environment. Thriving on tourism and the services sector, it is an aspiring "global city" [26]. The desire to compete in the global economy, however, has led to investment in selected areas at the cost of neglecting the remaining areas (Spatial polarisation). Thus, while a cosmopolitan middle class can afford an affluent lifestyle, poorer suburbs and townships are visibly sharing far less in the economic benefits, exacerbating historic rifts.

The burgeoning city depends on water conveyance from remote sources through pipelines and six dams; it relies on a complicated network of inter-basin transfer schemes to supply it with water. The surrounding Western Cape Province also relies on agriculture as an economic sector that supplies products for domestic consumption and international exports, most notably world-class wines and spirits produced from a myriad of vineyards across the province. As a result not only Cape Town was badly in need of more water, but also an industry that contributes significantly to the province and country's economy. This situation made for considerable technical challenges as decreasing dam levels had to be managed in a technically sound manner to ensure an equitable allocation to agriculture and urban populations.

So dire was the situation that, according to the Climate System Analysis Group at the University of Cape Town, on April 30, 2018, water storage in Cape Town's six storage dams dropped to 191 000 million litres (Ml), a slight increase from 184 319 million litres on March 31, 2017. On April 30, 2018, water consumption was 555 million litres per day. To put this into perspective, on August 31, 2014, well before the onset of the drought, water storage in the dams stood at a capacity of 923 596 million litres. At the same time, water consumption in the city was 755 million litres per day [27]. The balance between water consumption and dam storage levels were the major concern during the drought; city officials had to persuade consumers to utilise less water in the face of decreasing water storage levels. This had worked before, when block pricing brought down consumption by 20 % between 2000 and 2005, although with considerable social impact on the poor [21a].[2] Supply would be augmented from groundwater extraction, desalination and reuse but not dams.

The key factor during what Ziervogel [21] labels Phase 1 of the drought response (2015–September 2017) was to reduce water demand from 1000 million litres to 500 Ml a day, through cooperative endeavours to get residents and businesses to implement behavioural water-saving initiatives. For instance, people were encouraged to shower for no longer than 2 min while city officials promoted the use of recycled water. The city also monitored each residential household's water use and people started sharing tips on social media [28] on how to make each drop count. City officials, furthermore, banned water use for fountains and activities such as filling swimming pools and washing cars [28]. One of the most extreme and controversial measures was to restrict residents to a maximum of 50 L per day, punishing excess use with hefty fines.

Drought-induced water restrictions are nothing new: in the 1970s, when Cape Town had a population of 1.1 million, the city experienced water restrictions every summer [29]. The Cape Town crisis frame however starts after a run of unusually dry years. The megacity is normally a green oasis in an already arid region, fed by a system of dams and pipelines conveying water from the Berg River as well as from the neighbouring Sonderend adjacent catchment through the Theewaterskloof Dam, which takes care of 50 % of Cape Town's water storage capacity (See Map 1). This situation presents considerable vulnerability in a dry climate, and there had been no shortage of "Cassandras" foretelling a dire future but rarely believed (Fig. 1). In a 1990 article in the *Cape Times*, the Water Research Commission had already warned that supplies for the Cape Town area were expected to dry up in 17 years' time. National-level (African National Congress [ANC]) policy makers like Mike Muller, former Director-General of the Department of Water Affairs and Forestry (DWAF),[3] also had been voicing warnings of a shortfall and advocating infrastructural solutions. In 2007, ten years before Day Zero, the national DWAF had warned that Cape Town would need new water sources by 2015 [30].

The Cape Town leadership however was set on different trajectory, relying more on a behavioural (demand management) than an engineering (supply side) model of disaster risk reduction [33]. Cape Town reckoned it could handle an extreme situation, targeting an information campaigns and increased metering to induce water saving. Indeed, the city believed its demand management campaign was successful and on course, so that no new supply investment would be necessary. So while Muller [34] blamed the city of blinkered insistence on demand management, Olivier [35] counters the city actually heeded the forewarning and "acted quickly" by implementing a demand management strategy that "was so effective that the city met its 2015–2016 water saving target three years early. This pushed the deadline back to 2019, based on normal rainfall and normal water use" [35].

Then, a three-year spell of extreme drought hit. While scientists considered the depth of the drought a rare and severe meteorological event (e.g. [32]), that rarity does not of itself make drought disastrous.

[2] Faced with a shortfall in water revenue of almost R2 billion in 2018, city officials introduced water pricing increases to make up for the shortfall and proposed new water tariffs in the same year. These tariffs affected those consumers that use up to 10 500 L per month, most heavily. The tariff for water between zero and 6000 L increased from R26.25 per 1000 L to R40.73. For usage between 6000 and 10 500 L, the price jumped from R46 per 1000 L to R48.88. Water usage of between 10 500 and 35 000 L had a much higher tariff of R127.13 per 1000 L. If a consumer used more than 35 000 L per month, it would have cost R768,64 per 1000 L. The City called this a punitive tariff [91].

[3] Between 1994 and 2009 this department was known as the Department of Water Affairs and Forestry, between 2009 and May 2014 it was referred to as the Department of Water Affairs (DWA) [31]; currently it is known as the Department of Water and Sanitation (DWS).

★ Cape Times, Thursday, April 26, 1990

City will run out of water 'in 17 years'

By BARRY STREEK
Political Staff

WATER supplies for the Cape Town area are expected to dry up in 17 years' time, the Water Research Commission (WRC) disclosed yesterday.

"It is estimated that known fresh water supplies for the Cape Town metropolitan area will be fully committed by the year 2007," it said in its annual report.

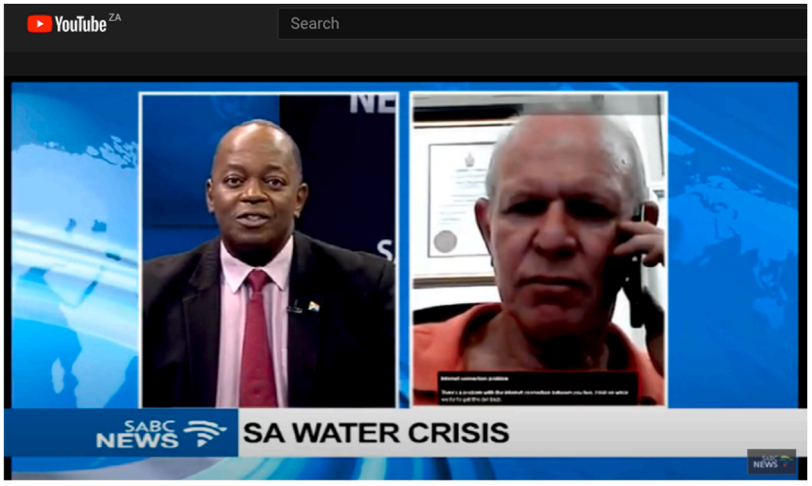
conducted to establish a data base containing information on water intake, raw materials, products, effluent quality and the amount of industrial waste from all types of industries using more than 150 cubic metres of water a day.

On water supplies, the commission reported that a survey was launched by the University of Cape Town's Department of Community Health to establish early

coming increasingly unacceptable worldwide for discharge sewage systems or to the environment because of their toxic content.

"In South Africa the position even more critical because bleaching process effluents be discharged by inland pulp factories after 1990."

The commission said 12 million animals were slaughtered at most 300 abattoirs, which re ed in about 80 000 tons of



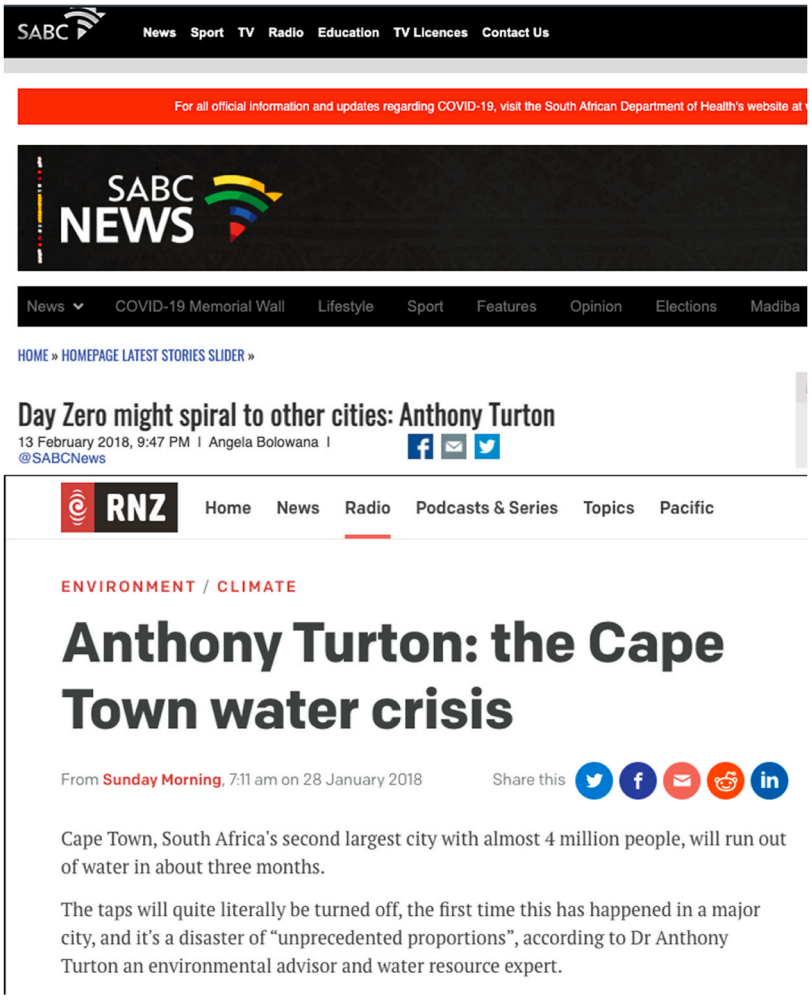
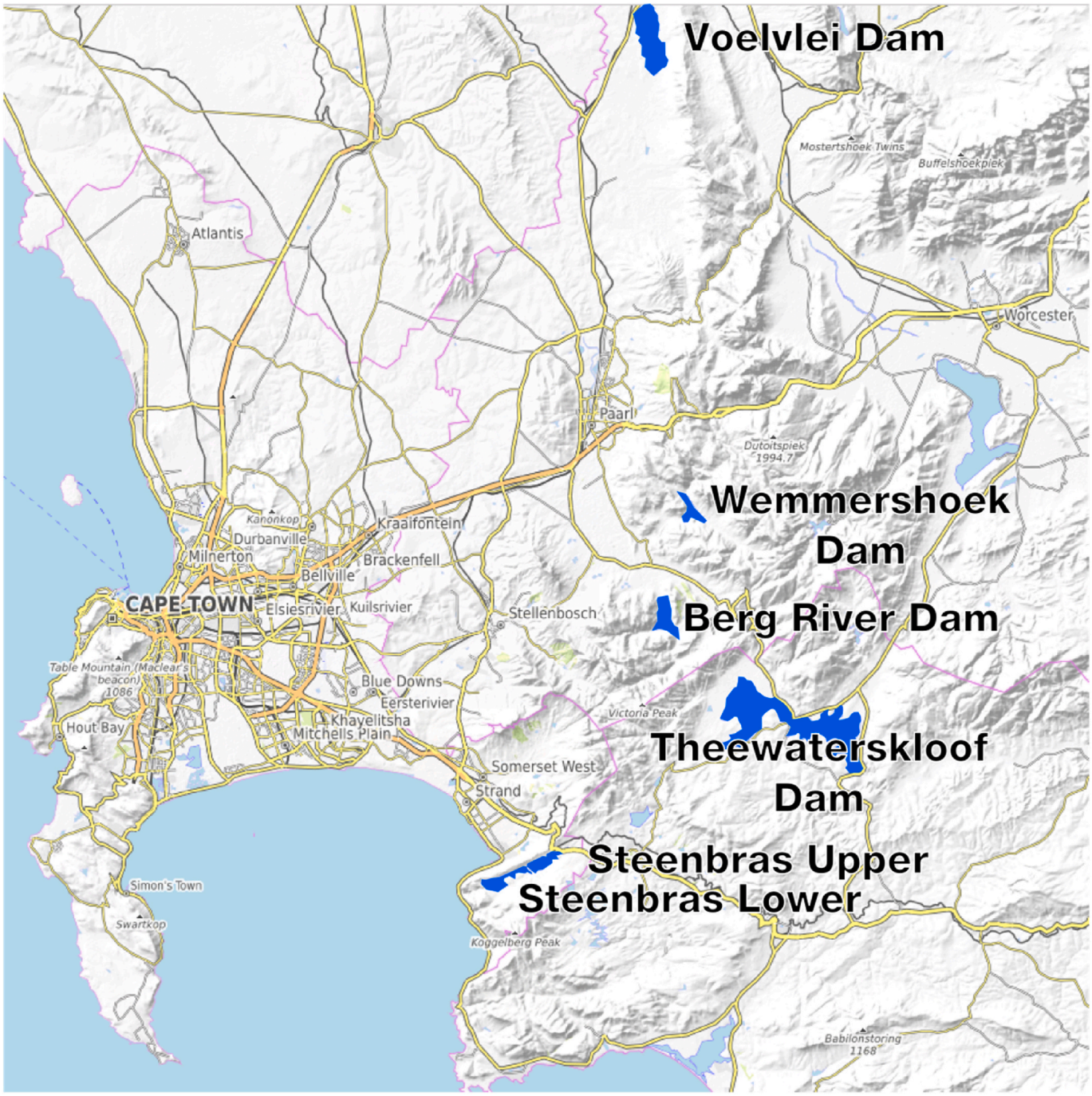


Fig. 1. Printed and social media on Day Zero then and now.



Map 1. Location of main dams supplying Cape Town.

When the ongoing drought started to take its toll on the dam levels, DWS took no action to curtail agricultural water use in 2015/16. Olivier [35] is adamant that: "(t)here is evidence that the department's failure went even further: that it allocated too much water to agriculture in the Western Cape.[4] This pushed demand for water beyond the capacity of the supply system and consumed Cape Town's safety buffer of 28 thousand megalitres. Cape Town shows some of the best water saving levels in the world. But its supply dams are being hit by national government's bungled water allocations to agriculture".

Cape Town was initially hesitant to resort to *scare tactics*. But informing and "nudging" Capetonians with restrictive water quotas did not appear to do the trick in sufficiently reducing demand. On the advice of a crisis communication consultancy the City council decided to adopt the term "Day Zero" in late 2017 as an awareness-raising tactic [21]. The campaign entailed a Water Dashboard on Cape Town's website, providing weekly updates on dam levels and water use and indicated a Day Zero when the water would run out.

[4] Olivier [35] noted in 2015 the Department of Water and Sanitation allocated 60 % of the Western Cape's water supply system to Cape Town, with almost all the rest going to agriculture.

This was not an entirely novel approach: the 90-day media countdown to April 2018 took a leaf out of the book written by European urban predecessors faced with water penury. Athens, Greece faced a similar three-year drought at the turn of the 1990s, and the water company declared 170 days until the water would run out, an "authoritative and digestible statement" that launched a successful countdown campaign [36]. In the Barcelona, Spain drought of 2007-8, "during the most critical period of the drought, mass media broadcasted daily figures of water stored in reservoirs supplying the MAB [Metropolitan Aria of Barcelona], converting drought into a dramatic spectacle (….)." [37] More recently, in 2015 the megacity of São Paulo had come within 20 days of 'running dry', but there, the governor chose to await the election results before launching a campaign [38].

In January 2018, the CoCT published the first *2018 Water Outlook* with detailed descriptions of what Cape Town was doing regarding water management, and a Water Map using green dots indicating low water usage at household level. The private sector also communicated efforts to save water in conjunction with Cape Town's "Day Zero" statements [21], the day when the dam system which supplies Cape Town (and other municipalities) with water, would not actually reach zero, but go below 13.5 % of its normal capacity.

That January the city's executive mayoress, Patricia De Lille, reprimanded Capetonians for their careless use of water in recent months and solemnly declared: "We have really reached a point of no return. (…) At this point, the chances of reaching Day Zero on the 21st of April is now very likely" [39].

How did scientists interpret "Day Zero"? When exactly was that day,[5] and was the water really going to "stop flowing" in Cape Town? The following investigates this.

4. "Day Zero" as science construction and uptake

4.1. What is Day Zero?

Before Cape Town launched its Day Zero campaign, the term already had meanings in non-water domains (Box 1). In this section we explore how it was conceived by its initiators.

In disaster context, Day Zero also denotes the retraced day the Covid-19 virus started to spread in Italy [44]. The term 'time zero' also appears to be use in disaster management.

According to the City of Cape Town, "Day Zero" means that the dams supplying the city with water is critically low; it does *not* imply "that there is no water in our [City of Cape Town's] dams" [45]. The 'crucial low' means dam storage will be at 13.5 % of full capacity. When the dams reach this level, the city will turn off most taps, leaving only vital services with access to water. In a statement by the city council: 'Some key areas will be prioritised to stay connected, but these areas will be extremely limited. The areas which will stay connected will be the majority of densely populated informal settlements' [45]. According to the World Wildlife Fund, "[m]ost schools will have to close if they don't have their own safe supply from boreholes or rainwater tanks. Many businesses will not be able to operate unless they can provide temporary (off-mains) toilets and drinking water" [46]. Even so, in February 2018, the *Cape Argus* reported that "[t]he Western Cape Government is finalising plans to keep schools open in areas most affected by the Province's crippling drought" [47]. On "Day Zero", "Cape Town residents will have to collect water at 200 collection sites or points of distribution in Cape Town. The City estimates that about 20 000 people will be able to collect water per site per day'" [44] – though the *Cape Times* noted it was unclear how this would be realised: "Even with multiple feeders from each standpipe, the impossibility of the exercise should be apparent" [48].

Such nuances however were easily lost from view. To the common media consumer, "Day Zero" was the day the megacity would run out of water, full stop. This view extended to the scientific community. Arcanjo [49] for example, noted: "Residents were faced with the prospect of queueing up for hours at the standpipes to receive their limited daily rations of 25 L a day, as public access to water was to be denied in the face of extreme drought", and Nhamo and Agyepong's [50] research "… discusses findings about institutional complexities surrounding Day Zero, a concept associated with water taps running dry because of drought conditions as aggravated by climate change in the city of Cape Town …" But when exactly was Day Zero? The next Section goes into this, after which we trace what "Day Zero" sought to achieve, in both its 'comic' and 'tragic' interpretations.

4.2. When is Day Zero? A moving target pinpointed with great precision

The doomsday clock for Day Zero was unfeasibly precise. Or was it? As Wolski (32, p. 24) notes, a hydro-climatologist at the Climate System Analysis Group, University of Cape Town, in the "… disputes [over the drought's severity], facts are few and opinions plenty".

What is significant about the drought's temporality is that scientists assigned a "clock time" conceptualisation to it. Following McIntosh [51], Meissner [52] notes: "… this clock-time understanding advances a spatiotemporal model of the past that (…) generalise across time and space and devalues context and temporal fluidity." This clock time lends a degree of certainty and precision that is simply not there. The Cape Town Day Zero prediction was ridden with uncertainty, as the critical *The Verge* site summarised: "The mayor of Cape Town (…) predicted in October 2017 that the city would run out of water by the following March. Since then, the date for what officials are calling "Day Zero" has shifted from April 21st, to April 12th, April 16th, July 9. Today, May 11th, was another potential Day Zero — but the latest from the city is that the threat has been postponed to sometime in 2019. What gives?" [53].

The timeline as construed by scientists, both in terms of the extremity and its culmination, reflects this confusion. In the below quotes, the underlining in the time indications is ours.

Extremity Some, like Wolski, pronounced this was the severest drought since 1933, while others, like Booysen [54] traced its harshness back to 1904. For Arcanjo [49] it was the worst drought in 1000 years, which seems far-fetched since the Dutch only colonised the Cape in 1652 and would only later start record weather data. According to Ndebele et al. [89] the rainfall data series from the South African Astronomical Observatory in Cape Town is "… one of the longest know single site instrumental records in the southern hemisphere, spanning over 176 years". Before then, no scientific measurements exist, although we know from lore the indigenous population did experience recurring drought. It is, therefore, impossible to say for certain that the drought was one of the worst in 1000 years. According to Burls et al. [90], the rainfall variability for Cape Town over the last 40 years indicates a downward trend in the number of rainfall days. Even so, this trend is masked by variations in rainfall intensity in that only an insignificant decline in rainfall can be observed in the data. This combination of low rainfall intensity for the 2015–2017 period with the combined long-term decrease in rainfall days was responsible for the drought. The Theewaterskloof reservoir's storage dropped to below 20 %, which "… coincided with the most severe, extended rainfall shortages in the ~40-year Cape Town Catchment Cluster [rainfall] record".

Day Zero Through statistical analysis, Wolski indicated the severity of the drought, asserting: "During the last months of 2017, Cape Town … was expected to run out of water. Reservoirs were dwindling, and 'Day Zero' – the day when the city's 3.7 million metro-area residents would have their taps switched off – was a very real prospect" (32: p. 24). Arcanjo [49] had this to say: 'April 16th, 2018 was supposed to be the day that Cape Town switched off its taps, the world's very first *Day Zero*."

[5] Some avoid this question by extending "Day Zero" from a specific day to an era, the time of anxiety over water ran out in Cape Town. Thus Robins [88] refers to "the height of Day Zero".

BOX 1
Day Zero in non-water contexts

Scientists in the agricultural (e.g. 40) and computer sciences use the concept 'day zero' to describe it in a specific manner. For the agriculturalist, it signifies the start of something; for the computer scientists, the impact of a computer virus. The latter holds true for Cape Town's 'Day Zero'.

The term's application in agriculture relates to the time when pesticide application in crops started (e.g. [41]). In the poultry industry, 'day zero' means the day a broiler hatches [40].

The computer sciences talk of 'day-zero worms' (e.g. [42]) and 'zero-day (or 0-day) vulnerability': "A zero-day vulnerability refers to a hole in software that is unknown to the vendor. This security hole is then exploited by hackers before the vendor becomes aware and hurries to fix it—this exploit is called a zero-day attack. Uses of zero-day attacks can include infiltrating malware, spyware or allowing unwanted access to user information" [43].

In February 2018, the *New Scientist* [55] reported that: "In fact, the situation is so bad that, on 1 February, residents were told to use no more than 50 L a day per person. If the rains don't refill the city's reservoirs, the taps will be shut off in May: Day Zero … The situation will worsen dramatically on Day Zero, when the city will start to turn off the taps to a million homes – currently estimated as 11 May. The idea is that places like hospitals and commercial districts will still get running water, but millions of people will have to pick up their 25-L-a-day rations from just 200 collection points."

4.3. What does Day Zero do?

The strategy of jolting the population into change was at the heart of Cape Town's communication strategy from January 2018. But to what effect? Apocalyptic framing comes in two flavours [56,57]: as 'tragedy' and as 'comedy'. In the "comedic" version, humanity sees the errors of its ways and changes its behaviour; in the "tragic" variety, it doesn't. Here we explore both genres; thereafter we summarise how the press corps itself reflected on this during our workshop with them.

4.3.1. Spelling tragedy: Day Zero as ground zero

The Day Zero image invited apocalyptic visions and hyperbolic metaphors. Western Cape Premier Helen Zille of the Democratic Alliance (DA) requested the central government declare a disaster, claiming the challenges were the biggest a city had to confront since the Second World War or the 9/11 attacks – in fact this was widely misreported as a claim that Day Zero was *bigger* than these events [58]. The then Mayoress, Patricia de Lille, considered bringing in defence forces to protect standpipes when pipes would be shut off to quell a Hobbesian all-out 'water war' of all against all. "Most of the metropolitan area's nearly 4 million residents will have to collect allotments of water from 200 distribution points — a situation that the mayor fears could lead to anarchy."[59] "Risk assessments would be carried out to identify conflict-prone neighbourhoods with past histories of protests or gang activity, in order to deploy the South African Defence Force and police personnel in those areas" [60].

Hence it should come as no surprise that several media outlets took this as a cue to speculate on ruination and chaos [61], invoking the spectre of "Mad Max-style water wars" [62].

Adding fire to the flames, the Water Crisis Coalition, an alliance of trade unionists (SAFTU and COSATU), the Socialist Revolutionary Workers Party and ANC activists, from townships and peri-urban farming areas, made the national and international press dubbing the water crisis the "New Apartheid" [63], pointing at poor service delivery in the townships, notably Khayelitsha, which they claimed were "on the verge of revolution". In April they staged a protest march, but the revolution never came.

A political science professor and consultant, Tony Turton, also weighed in the national and international media in highly alarmist terms: "I'm afraid we're at the 11th hour (…) There is no more time for solutions. We need an act of God. We need divine intervention." (in [64]). He told the *New York Times*: "The drought will literally bring the city to its knees — It's not an impending crisis — we're deep, deep, deep in crisis" [65]. In an interview with Radio New Zealand, he depicted the reality in Cape Town on the purported "Day Zero" as "ground zero" where people would have to fetch water from wells like in medieval times and carry it back to their homes for consumption. In the same vein both the academic[6] and journalists (see below) claimed essential data had been actively suppressed and warnings ignored.

Both the (ANC-aligned) professor and the activist coalition thus expressed great distrust of the ruling Democratic Alliance (DA), making the handling of the water crisis a new front in the ongoing, bitter political standoff between the ANC ruling at national level and the DA at urban and regional level. 'One of the biggest debates is whether local government is handling the crisis effectively [35]. There was plenty of finger pointing; the activists sought to reveal the "true intentions" of the DA city leadership, accusing them of sweetheart deals with Coca Cola and other multinationals leaving the burden of water savings on the disadvantaged. Reflecting Klein's [67] "Shock Doctrine", COSATU, the trade union, proclaimed Day Zero a "manufactured crisis so water could be privatised" [68].

Unlike the activists and despite the political tension, however, the national ANC leadership can be said to have bought into Cape Town's crisis narrative, mentioning the water crisis in its cabinet proceedings and accepting a national disaster declaration in February 2018. One consideration may have been that the water crisis may have been a welcome distraction from bad press over various political scandals involving ANC politicians, including the then Water Minister.

4.3.2. Finding comedy: voices of solidarity

The spectre of anarchy is a recurring trope of disaster reporting. Despite common misconceptions about disaster, however, crisis usually brings out the best rather than the worst in people. Anarchy and looting are rare in emergencies [69]. The CoCT, therefore, had reason to count on "an air of collective responsibility and teamwork" [70]. The press highlighted humorous one-liners in the guidelines ("If it's yellow, let it

[6] "We have tried our very best to get the reports out in the public domain at least to some kind of peer review. We have been blocked by the DA (Democratic Alliance); they will not make those reports available" [66].

mellow")[7] and sacrifices presenting not showering and not washing one's clothes as "cool" (e.g. [71]).

Jacaranda FM, a popular regional radio station broadcasting across Gauteng and parts of the Limpopo, North West and Mpumalanga Provinces, started a drive to donate water. During March and April 2018, the radio station, through its Project Waterdrop initiative, collected more than 210 000 L of water to help alleviate the impact of the drought in the Western Cape. During the Super Rugby match on March 31, 2018 between the Vodacom Blue Bulls (the Pretoria-based rugby team) and the DHL Stormers from Cape Town at Loftus Versveld Stadium in Pretoria, nearly 30 000 rugby fans joined Jacaranda FM to raise funds for the Cape Town water crisis through Project Waterdrop. The focus of the enterprise was not only to collect much needed water for Capetonians, but also on installing boreholes with solar powered pumps at Cape Town schools [72].

Images of multiracial queues at springs, people helping each other filling big jerrycans, became media staples symbolic of Day Zero as a "social leveller" [73]: "In the early months of 2018, during the height of Cape Town's worst drought in 100 years, the mainstream media represented the water crisis as 'the great leveller', with Capetonians coming together in a time of adversity to do everything they could to save water and avoid 'Day Zero', the day when the taps would stop flowing."

A notable positive voice from the academic community saw "signs that Day Zero might be averted"[74].

4.3.3. What did the press club participants make of it?

Journalist Terry Bell had been a thorn in the City of Cape Town's (CoCT) side warning of drought since the early 1990s [75], and the water crisis also did not come as a surprise to the media participants in our October 2019 Press Club workshop. It noted structural vulnerability of the South African water system increased the country's susceptibility to fatal systemic breakdown: "it's a dilapidated system". As one participant claimed, "South Africans love to live dangerously, leaning over the precipice."

The term "water crisis" denotes a moment of decision, a situation where a territory is "on the verge of" running out of water. While in a disaster, the dreaded threat has already materialised, in a crisis this can still be averted. In that sense depicting Day Zero as a crisis presents the more exciting narrative for media outlets. As a workshop participant noted, "Especially in Africa we are storytellers, you want a neat ending". Day Zero held out the spectre of impending catastrophe, with a precise deadline and a cliff hanger.

Participants in our workshop who spoke out were quite supportive of the Cape Town leadership's successful storyline as a communication strategy. One of our workshop participants noted: "Day Zero never in fact arrived, and there is now debate about whether it was a genuine possibility, or merely a ploy by the city to coerce and shame the population into changing its behaviour—either way, it must be said, the 'ploy' worked very well."

When we asked the workshop participants if the press felt "played" by the Cape Town leadership, they shrugged, judging it to be useful sensationalism to change consumer behaviour. They noted with some pride that Day Zero has become an international brand name. One journalist was at pains to point out the City could not predict how it would "play out". "News is 24/7", it was argued, "you can't control the narrative. You don't have the reach compared to 24 000 likes on Facebook". "The news industry can choose from many disasters at any given moment – which one to focus on? There is a news hierarchy at the global level of global impact disasters, privileging the Notre Dame fire over the Amazonian rainforest fires."

Workshop participants noted that in both drought and flood situations the "crisis" mode only seems to resonate when the middle class are affected. One participant pointed out that water penury in cities like Grahamstown, in the Eastern Cape, got disproportionate press attention, due to its educated middle class with access to the press. A white middle class crisis, however, also creates an inroad for political demands from the black and coloured population: "If you want something solved, get a white person to complain. We do not express dissatisfaction." In this context, a participant referred to news values emphasising "timeliness, proximity, prominence".[8] Timeliness does not well match a situation that persists daily. Some 1.5 million Capetonians cannot afford to pay for water [21], for many on the urban fringes, water access is poor. As several news reports pointed out, in large suburban settlements like Khayelitsha, many people living in informal housing depend on standpipes every day – in such communities, "every day is Day Zero" [77].[9]

The City of Cape Town "promoted a united civic identity", but for the poor, "nothing would change if private taps were shut off", press club participants noted: "When there's no rainfall, there's no tap water: people in townships or villages are used to it, and will say 'what's new'?"

5. Let's call the whole thing off

Out of the blue, on March 7, 2018, the national Democratic Alliance leader, Mmusi Maimane intervened, basically overruling De Lille and publicly renouncing the dire predictions. Without any change in meteorological conditions, but correctly gambling on rains filling the reservoirs in the months to come, he pronounced: 'Day Zero will not happen in 2018 (…). Cape Town and the Western Cape are open for business' [79]. Note that Maimane added an important proviso: *if* consumption remained low and *if* rainfall occurred that year, Day Zero would not come to pass in 2018; as Allsop [79] notes, nothing had changed about the environmental reality. But that nuance predictably went lost in the headlines and commentaries [73,79]. As a result, many lost interest in the issue [80] as the lack of previous community engagement had led to low buy-in in the first place [81].

The damage the Day Zero narrative was inflicting on the tourism industry, a mainstay of the Capetonian economy, doubtless had a bearing on this pronouncement. The premature cancellation of Day Zero left many confused, however. This came less than a month after the declaration of a national disaster, which Agri SA and the Western Cape Province had been pressing for since 2016. A disaster declaration releases emergency relief funds. Farmers felt betrayed after having shown hydro-solidarity to urbanites in Cape Town. Farmers had agreed to divert part of their water allocation to the city, a show of solidarity from the agricultural sector, routinely touted worldwide as a water guzzler claiming by far the most water especially in arid regions (reported in media: [82]).

Cape Town's Day Zero campaign indeed reaped the intended effect in that it became a self-denying prophecy. But looking back, several have pointed at the level of exaggeration. A risk of apocalyptic hyperbole is that it backfires like a boomerang [83,84]: after garnering initial support, it risks backfiring, reducing the support base for future dire scenarios. The deliberate media campaign triggered conspiracy theories, and the exaggeration indeed brought a backlash when Day Zero was called off even before it started to rain again. Called on for solidarity, then being called off without an immediate sign of change, farmers and trade unions were understandably upset – an emotion with a topical parallel in states suddenly "opening up" locked down societies despite the virus still raging under another state of emergency.

[7] This refers to the use of ablution facilities, particularly toilets. When a person urinates, it is "okay" to not flush the toilet and, in so doing, save the water for later use, especially when one defecates and must flush the cistern for hygiene reasons to dispose the faeces.

[8] Likely referring to Conley & Lamble [76] who identify eight standard news-value criteria: *Impact, conflict, timeliness, proximity, prominence, currency, human interest* and *the unusual*.

[9] Informal areas however also were depicted in the press as profligate with water [78].

6. Conclusion

> "It's not us who have said there is Day Zero. We do not understand how some people somewhere decided to talk of Day Zero. It is not us"
>
> (South Africa Water Minister addressing the house's portfolio committee on water and sanitation) [85].

Crises are not only ideational conceptions, but conceptualisations meant to spur action [86]. In casting nature as a source of anxiety [36], with a rather shaky deadline, Cape Town's campaign followed earlier examples of drought countdown campaigns, but the "Day Zero" label turned it into a brand, a meme that continues to entice. Unlike saying "floods" in the Netherlands [19], saying "drought" does not put South Africans on high alert, and when the City of Cape Town stepped up a gear to "Day Zero", the crisis narrative took time to resonate.

For the news industry, the doomsday clock provided an irresistible narrative. In declaring Day Zero, the City Council gave the media a compelling countdown, which it was happy to amplify. Activists latched onto the drought crisification narrative by calling attention to gaping structural inequalities in access and spoke of impending revolution.

Some "media professors" went along with the abridged media version, not correcting the situation to reflect the City of Cape Town's actual policy, in which most taps were to be turned off and "only vital services will receive water", including the townships. These lent scientific credibility to the narrative of doom and anarchy, eliding uncertainty and complexity for the sake of impact. Being the 'go to media professor' for media outlets across the world perhaps encouraged a more value-driven message invoking medieval scenes, which feeds into sensationalist media reporting.

In the present article however we also encountered professors who engaged the media with more cautious messages, reporting more or less factually on what they knew. After all, Day Zero was not tantamount to the entire city's economy coming to a halt in medieval regression and anarchy. On the day the City of Cape Town had picked, the water would not *all* have run out; the taps would be switched off and middle-class Capetonians would have to rely on standpipes, a daily reality for many township and non-urban dwellers.

We noted Day Zero also triggered engaging solidarity campaigns in a divided city, generating a sense of fun and pride of Cape Town having "pulled it off", of warding off the doomsday scenario rather than falling prey to fear and anarchy. Journalists not only contributed to constructing water crises, but also played a vital role in alleviating the plight of people: media reported and even started altruistic actions where the public were encouraged to reach out to those in need, giving a different meaning to the discourse of crisis construction. In this sense, Day Zero was "mobilizing publics" [87] by affect, calling on negative but also positive emotions of solidarity in cutting back on water use for the greater good. If Day Zero was a media strategy, a crisis narrative staged to jolt the middle-class into water-saving behaviour, it also called (international) attention, if less pronounced, to the plight of the underserved population, for whom Day Zero was a non-event.

As a reinforcement of Cape Town's ongoing water demand management strategy, the behavioural change campaign held up rather well against large infrastructural supply-side alternatives, and despite loud dissenting voices was supported by important sections of the press. The sudden cancellation of Day Zero however, betting on the return of the rains, produced a backlash in those who had supported the narrative, especially those who had pushed for the disaster declaration. This vacillation is likely to make it much harder to garner support when a new slew of dry years hits the city in future and may be a cautionary tale in "constructing" and communicating future impending crises.

Seen from a disaster risk reduction angle, the case reaffirms people's tendency for pro-social behaviour and relative lack of panic in the face of (impending) crisis, well known from the disaster sociology literature. Making Day Zero such a high-profile media 'event' ran a risk of oversimplification, overshooting its goal or even exploding into the messenger's face; the former certainly happened. While Cape Town may be rather unique in its social make up, disaster (and climate) communicators may do well to take a leaf out of Cape Town's book in exploiting people's sense of fun and solidarity even when confronted with tough challenges.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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