

# V

## **A Brief History of Running Out of Time**

*“ . . . The tortoise lays on its back, its belly baking in the hot sun,  
beating its legs trying to turn itself over . . . ”*

### **In a walnutshell:**

*(The return of) The Show About Nothing >*

*Fact v Fantasy >*

*Sense and Insensibility >*

*Semblance of Stability >*

*Risk v Reward >*

*Reversal of Misfortune*



**Fig. 10:** 2880 Broadway, Manhattan, Tom's Restaurant/*Monk's Café*, United States of America, 20 November 2019. Photograph by author.

## No Manhattan Is an Island

Whole areas of our planet could be subject to drought and starvation if the pattern of rains and monsoons were to change as a result of the destruction of forests and the accumulation of greenhouse gases.

– Margaret Thatcher, Speech to the UN General Assembly,  
UN Building, New York, 8 November 1989<sup>205</sup>

We're not scaremongering  
This is really happening  
Happening  
We're not scaremongering  
This is really happening  
Happening.

– Radiohead, “Idioteque” (2000)

Hansen and his GISS colleagues could easily descend their office stairs into Tom’s Restaurant, but had they also been able to step across the line between fiction and reality into Monk’s Café, their message to the *Seinfeld* cast would have fallen on deaf ears. Not so for those attuned to the rising seas submerging The Tomb on Enewetak atoll in the Marshall Islands, for whom alarm bells resonated amidst a burgeoning international movement then assembling to prevent the turtle being flipped. Five months after Hansen’s June 1988 Senate testimony, while David and Seinfeld were starting to write their sitcom, the UN held their first Intergovernmental Panel on Climate Change (IPCC) meeting, followed a month later by a General Assembly meeting at the UN headquarters in Manhattan, and its resolution titled the *Protection of Global Climate for Present and Future Generations of Mankind*.<sup>206</sup>

The effectiveness and potency of these assemblies and resolutions is a side note to this song, and one that does not require anything beyond a cursory brush stroke. Thirty-two years later, with 20/20 hindsight in 2020, the abject failure to identify, manifest, and implement effective measures at the relevant scale is blatantly self-evident. That such bodies, representing deeply economically invested and often conflicting governmental units, are good for agreements that look good on the page, and incredibly ill-suited to drastic global intervention is as obvious

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<sup>205</sup> Margaret Thatcher, “Speech to the United Nations General Assembly (Global Environment),” transcript of speech delivered at the United Nations Building, New York, 8 November 1989, accessed 6 May 2019, <https://www.margarethatcher.org/document/107817>.

<sup>206</sup> UN General Assembly (43rd session: 1988-1989), *Protection of Global Climate for Present and Future Generations of Mankind* A/RES/43/53 (New York: United Nations, 1989).

as their use of the stage is poor. Yet perhaps the far more fundamental problem was the demeanour with which the issue itself was approached.

Twelve months after the UN assembly, Margaret Thatcher gave a speech on the main stage of same room, proclaiming that human-induced climate change was underway. Her speech was a veritable update to the Stegosaurus delivering the universal sigh, except that this human twist to the sigh deliberately dropped the third part: admitting that “the world’s climates are changing” and that “the mammals are taking over” but steadfastly refusing to accept that “we all have a brain about the size of a walnut.”

In other words, her speech assumed our capacity to understand what we had inflicted, and moreover, to understand the world upon which we had inflicted it and the cosmos to which that world was hitched. Climate change was just another challenge, a mechanical problem to be overcome by the architecture of postwar global governance, as exemplified by the United Nations itself. The two decades of massive social change and upheaval between Fuller’s *Spaceship Earth* and Thatcher’s speech had achieved little in terms of outlook: despite recognising the rupture unfolding, the human world still chose to approach that rupture with Bataille’s “narrow mind of the mechanic who changes a tire.”

Thus, for all the lofty rhetoric of this most public airings of the (human twist) to the universal sigh, an honest banner hung behind Thatcher’s podium would have proclaimed that *It’s all Fun and Games Until Someone Loses an Island* . . . Her utterance of the universal sigh may have noted that “the accumulation of greenhouse gases”<sup>207</sup> could result in some of the lowest-lying lands on earth (namely numerous Pacific Islands) being lost to the rising seas. And further, she recognised the immediacy of the risk, which could indeed manifest while her ilk played their fun and games of dithering and prevarication.

But if we imagine Thatcher standing at the prow of a ship, we note that despite her descriptions of the deleterious consequences of both the vessel’s direction and speed of travel, any real, meaningful change of course did not enter the horizon. The image of a ship describes the future surroundings of the very stage on which Thatcher stood, for it was also highly susceptible to sea level rise. After all, no Manhattan is an Island, for this famous chunk of civilisation so-called also stands to be lost to the rising seas, and with it the United Nations headquarters, on the banks of East River, and only ten metres above the harbour’s current sea level.

Amidst all this hot air and rising water, across the Atlantic French philosopher Michel Serres was building an alternate view of the “Protection of Global Climate,” and of the world order now assembling to grapple with it. His 1992 book

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207 Thatcher, “Speech to the United Nations General Assembly.”



*The Natural Contract* presciently considered whether the 1988 that Wade termed “a summer’s heat wave”<sup>208</sup> was natural variability, or human-caused climate change. The opening gambit titled *Climate* offered “two equally plausible interpretations” of that unseasonable season, firstly as natural variability:

A similar sequence of hot dry days could easily be found in the decades for which we have records, or inferred for the millennia beyond human memory. The climatic system varies greatly, and yet fairly little, being relatively invariant in its variations: quick and slow, catastrophic and mild, regular and chaotic. Rare phenomena are therefore striking, but they shouldn’t surprise us.<sup>209</sup>

Alternatively, he posited that the “summer’s heat wave”<sup>210</sup> of 1988 could also be interpreted as

something new under the sun, something rare and abnormal, whose causes can be evaluated but whose consequences cannot: can it be acclimated by standard climatology? At stake is the Earth in its totality, and humanity, collectively. Global history enters nature; global nature enters history: this is something utterly new in philosophy.<sup>211</sup>

Something utterly new for the human world as well: the first mainstream proclamations of a *New World Coming* through human “causes” were now being “evaluated” as yielding unknown “consequences” due to eventuate anywhere between some new world “just around the bend,” or in many-a-bend to come.

As a philosopher, Serres was concerned not with adjudicating between “equally plausible interpretations” for unseasonable seasons, but with formulating a philosophy of law for human relations with a more-than-human world now manifestly perturbed by human activity. Hence the title: *The Natural Contract*. Even then he perceived the IPCC’s theatrically good intentions amounted to an ill-conceived fable, due to their insufficient recognition of the nature of the planet upon which we had inflicted our industrial bombardment: from this perspective, their failing was in fact a lack of fidelity to the workings of the Earth System.

This is not due to a dearth of science, but rather a surfeit of scientific world-views increasingly at odds with the world itself, as revealed by the then-emergent discipline of Earth System Science. The human relationship to climate change has, up to this point, rather brutally reflected the three universal sighs of changeability, consequence, and comprehension (or lack thereof) of the same. A journey akin to discovering how something works by accidentally breaking it, only to find

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<sup>208</sup> Wade, “Crying Wolf in the Greenhouse.”

<sup>209</sup> Serres, *The Natural Contract*, 3.

<sup>210</sup> Wade, “Crying Wolf in the Greenhouse.”

<sup>211</sup> Serres, *The Natural Contract*, 4.

this discovery reveals the now-broken object (in this case a planet) to be more fragile than we could have imagined, and more impossible to put back together than we could ever have suspected. Inspecting the fractured components in detail also reveals that the object has in fact broken many a time before, making it something that can never be put back together, because there is no original 'back' to go back to, and there was no 'together' to begin with. Kubrick never returned to Manhattan under the threat of nuclear war, and there will be no island to go back to once the island is lost to its own fun and games.

The scientific worldview admonished by Serres represents a mentality pervasive to Western thought since the Enlightenment. An obsessive compulsion to dissect the world's disorder by piecemeal comprehension, as if an apparent order of pieces and their subsequent worldviews could be recombined into a whole. The Enlightenment went hand-in-machine with the contemporaneous Industrial Revolution, which provided newly efficient means to desecrate the world, even as we dissected it down to human scale.

Together, the Enlightenment and the Industrial Revolution yielded a society that thoroughly conflated its worldview of man dissecting, studying and understanding the world with the world itself, meaning it mistook its worldview for objective reality. Thus, enmeshed with a society's experience of the physical world, this worldview breeds hubris if the conflation becomes a fable of human control, guardianship and maintenance, as per a Fuller. But it breeds humility, if the conflation is humbled by what it observes, and faithfully acknowledges its vulnerability to the vicissitudes of the cosmos, as per a Bataille. We know that the fable of human rationality conquering the chaos of nature became the dominant conflation, but even during the Enlightenment scholars such as David Hume and Johann Fichte preached humility, not hubris, in attempts to outwit the World Turtle. In his *Dialogues Concerning Natural Religion*, Hume mediates upon the relationship between the part and the whole, both in terms of the world and ones' worldview:

Look round the world: contemplate the whole and every part of it: You will find it to be nothing but one great machine, subdivided into an infinite number of lesser machines, which again admit of subdivisions, to a degree beyond what human senses and faculties can trace and explain. All these various machines, and even their most minute parts, are adjusted to each other with an accuracy, which ravishes into admiration all men, who have ever contemplated them.<sup>212</sup>

And there amidst all the detail lies the devil, the final step to Hume's argument that is self-evident for a dour demeanour, though not for a dire one: the greatness

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212 Hume, *Dialogues Concerning Natural Religion*, 19.

of the machine is beyond question, but its infinite regressions will, for us, never cohere into “one great machine” that can be “serviced in total” as per Fuller’s vision for *Spaceship Earth*. We are only ever at its service, even if we may think that we can “contemplate the whole and every part of it.”

The sheer impossibility of ever so doing was not lost on early conservationists such as John Muir, who declared in 1911 that “when we try to pick out anything by itself, we find it hitched to everything else in the Universe.”<sup>213</sup> Hence the danger in conflating the idea of an earTheia that we can service with the idea that we are at this planet’s service, just as it is at the service of the cosmos within which it is situated. Whether looking outwards, into the infinite cosmos, or inwards to the ever-more minute connections between myriad lifeforms on this planet: going up or down in scale, it is always just turtles all the way down. Hence the extreme relevance of Bataille’s comparison to an immense industrial network that “cannot be managed in the same way that one changes a tire.”

Neither Hume’s revelry at the “great machine” or Bataille’s humility toward it could shake the reductive narrative of human ingenuity overcoming all obstacles that has been dominant since the Enlightenment. The intervening centuries were as disinterested in such heresy as the *Seinfeld* cast was in the GISS research occurring above the real-world site of their beloved cafe. For a situation as grave as anthropogenic climate change, the continuation of this entirely inappropriate, abstracted, human-scaled and reductionist mindset has consequences all the more dire, as Serres lamented:

Until this very morning nature eluded us: either we limited it to the local experience of the little hay field, or else we made it an abstract concept, sometimes applied to man. And if we studied it, in the sciences, we cut it up into even smaller plots; one of the crises in our knowledge comes from its inability to function without these divisions and from the need to solve the problems posed by their integration.<sup>214</sup>

The fate of heretics who claim that we have fundamentally misunderstood both ‘nature’ and our place within it shows that a linear, incrementalist, reductionist mindset cannot be undone in the space of a generation. With only a brief history of running out of time behind us, and a far briefer history of running out of time ahead of us, we still claim we can “solve the problems” posed by our superimposition of a wayward worldview upon the actual world. And this, in less than a generation. The Dour notes with patience that the linear, incrementalist, reductionist mindset that pervades endeavours like the IPCC was never going to yield to a

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213 John Muir, *My First Summer in the Sierra* (Boston: Houghton Mifflin, 1988 [1911]), 10.

214 Serres, *The Natural Contract*, 110.

non-linear, chaotic, holistic mindset just because Earth System Science had burst the delusion of a *Spaceship Earth*.

*The Natural Contract* makes for no mere navel-gazing on the history and philosophy of science, or pontificating on the philosophy of law. Rather, Serres offered a worldview that saw through the hollow conceit of the international edifice assembling to counter ecocide by a society unleashing mutually assured destruction via global warming, rather than global warmongering. He recognised that the parties assembling could never suffice because their mentalities and remit extended to being able to

slow down the processes already under way, legislate reductions in fossil-fuel consumption, massively replant the devastated forests . . . all fine initiatives, but together they amount to the image of a ship sailing at 25 knots toward a rocky bar on which it will inevitably be smashed to pieces, and on whose bridge the officer of the watch advises the engine room to reduce speed by a tenth without changing direction.<sup>215</sup>

However, this is neither nihilistic nor fatalistic critique. It merely extends the faulty logic underpinning the present onto hazards that have appeared on the horizon, where shipwreck is a *fait accompli* so long as a worldview extends only to “reduce speed . . . without changing direction.” The question then becomes: who gets to be the “officer of the watch,” issuing commands? And who labours in “the engine room” turning those commands into actions?

## Throwing a Spanner in the Post-Industrial Works

In every system of morality, which I have hitherto met with, I have always remarked, that the author proceeds for some time in the ordinary way of reasoning . . . when of a sudden I am surprised to find, that instead of the usual copulations of propositions, is, and is not, I meet with no proposition that is not connected with an ought, or an ought not. This change is imperceptible; but is, however, of the last consequence.

– David Hume, *A Treatise of Human Nature* (2009 [1739])<sup>216</sup>

Even during the Enlightenment, Hume articulated how deriving is-from-ought is always fraught and tenuous. For the unfolding rupture, Bruno Latour has reworked this into the difficulty of deriving Matters of Concern from Matters of Fact.<sup>217</sup> And

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<sup>215</sup> Serres, *The Natural Contract*, 31.

<sup>216</sup> David Hume, *A Treatise of Human Nature: Being an Attempt to Introduce the Experimental Method of Reasoning into Moral Subjects* (Auckland: The Floating Press, 2009 [1739]), 714.

<sup>217</sup> Bruno Latour, “Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern,” *Critical Inquiry* 30 (2004): 225–248.

we shout ‘Land ho!’ A Matter of Fact declares our ship to be, as Serres puts it, heading at “25 knots toward a rocky bar on which it will inevitably be smashed to pieces.” Something got lost in translation though, leaving mute a Matter of Concern that tells us we ought to change direction.

While the reason for the discrepancy between is and ought, or Matters of Fact and Matters of Concern can be identified, is-ought and Fact-Concern chasms remain unreasonable: they cannot be reasoned with. And those who take heed of heretical philosophies suggesting a change of course are almost always marginal to those who command according to the managerial mindset of a Fuller aboard *Spaceship Earth*. Those who issue commands to the engine rooms, whether a collective inner sanctum of War Room assemblage, such as *Dr. Strangelove*, or the lonely inner sanctums of tyrants such as Tyrell or Queen Mary Tudor, are seldom versed in heretically humble philosophies from a Hume or a Serres.

Yet they are also unwilling to comprehend the discoveries of scientists like Hansen at the GISS, whose work entails fidelity to scales of time and space that far outstrip the human scale of contemporary governing bodies or individuals. And beneath tyrant or government there stand all of those who wield limited leverage in deciding the speed via control of the engine room, but none at all in deciding the direction of the ship.

Assembled in 1992, the same year Serres’ *The Natural Contract* was published, the United Nations Framework Convention on Climate Change (UNFCCC), has been the principal engine room for taking the empirical proclamations of scientists like Hansen over the is-ought chasm as described so eloquently by Hume. Every year since, the UNFCCC has met to implement its global mechanism for mitigating human-induced climate change. And yet, atmospheric carbon dioxide has gone from 352 Parts Per Million (PPM) in 1992 to 426 PPM in 2025. Even at the time the UNFCCC was assembled, carbon dioxide concentration was already above 350 PPM, the notional maximum concentration that would not eventually precipitate runaway climate change.

The principal reason for such abject failure is that the IPCC and UNFCCC are restricted to tempering climate change consequences, rather than climate change causes. Such bodies can change the engine speed of our ship headed for the rocks, but not its direction. The Matters of Fact identified in the 1972 report *Limits to Growth* were eponymous with its title – it detailed problems of overpopulation, unsustainable consumption, and equally unsustainable resource use – but this never translated into Matters of Concern sufficiently effective to dramatically curtail the growth fetishism that underpins capitalism.

Thus, global climate and environmental policy were never going to be able to change the ship’s direction of travel, but had to settle for the lesser aim of decreasing its speed. And even that modest aim proved beyond their power to fulfil.



The final destination is no longer a distant speculation upon the horizon, because the consequences have long since shifted into the foreground, drawing ever closer as the ship increased rather than decreased its speed toward that “rocky bar on which it will inevitably be smashed to pieces.” Small wonder that subtlety was one of the first overboard for some, with philosophy on the topic exemplified in titles like Dale Jamieson’s *Reason in a Dark Time: Why the Struggle Against Climate Change Failed and What It Means for Our Future*, from 2014.<sup>218</sup>

Serres had already grasped the insoluble nature of the situation via the anthropogenically modified climate of that 1988 “summer’s heat wave,”<sup>219</sup> remarking before the UNFCCC was even formed that any so-called “solution to a long-term, far-reaching problem must at least match the problem in scope.”<sup>220</sup> A catastrophic or demonic problem thus usually requires a catastrophic or demonic solution, which begets new problems requiring new solutions until it’s turtles all the way down . . .

Ignorant of our own limitations, we fell through the floor of N-LSD when we flipped our tortoise over, never understanding that having the power to flip it one way means nothing for gaining the power to flip it back, but rather everything for opening portals to limitless repercussions. A hammer will crack open any refined and complex object, but it will not help you put it back together, nor will it help you understand what it was you broke in the first place.

Having embraced the scope of the problem at the moment when “global history enters nature [and] global nature enters history” Serres sought to develop a worldview for what Chakrabarty calls “epochal consciousness,”<sup>221</sup> as first articulated by German philosopher Karl Jaspers in his 1963 book *The Atom Bomb and the Future of Man*. For Chakrabarty, anthropogenic climate change has long ceased to be about problem solving, since epochal consciousness

cannot be charged with the function of producing solutions for an epochal crisis because all possible concrete solutions of an epochal problem . . . will be partial or departmental . . . Epochal consciousness is ultimately ethical. It is about how we comport ourselves with regard to the world under contemplation in a moment of global crisis; it is what sustains our horizon of action.<sup>222</sup>

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218 Dale Jamieson, *Reason in a Dark Time: Why the Struggle Against Climate Change Failed and What It Means for Our Future* (Oxford: Oxford University Press, 2014).

219 Wade, “Crying Wolf in the Greenhouse.”

220 Serres, *The Natural Contract*, 30.

221 Chakrabarty, “The Human Condition in the Anthropocene,” 143.

222 Chakrabarty, “The Human Condition in the Anthropocene,” 145–146.

This “horizon of action” was envisaged by Chakrabarty in 2015, in full acquiescence to how imminent the rocky bar then loomed in the foreground.

In *The Atom Bomb and the Future of Man* Jaspers could only allude to the kind of “epochal consciousness” he sought to inculcate, because the new worldview he proposed was rather preoccupied by the never-ending task of eviscerating the prevailing worldview. Worldviews do not alter easily, even over multiple generations. Whether the doctrine of MAD, the tenets of our now global Industrial Revolution, or the legacy of Enlightenment thinking, a dominant mindset does not yield just because a few heretical thinkers or rampant court jesters throws stones at the stalwart and windowless inner sanctums of power. As Jaspers declared:

The purpose of this book is not to take a ‘departmental position,’ as, for example, from the viewpoint of philosophy as an academic discipline. I mean to address that part of man which is above departments. We have special fields in science, organized departments in administration, a diversity of specialists in politics; we defer to the authority of expert knowledge, of professional standing, of official position, of membership in groups, nations, states. But all divisions presuppose the unity of the whole. Departments have a limited meaning. The whole which unites them also limits their realm of validity; it is their source and their guidepost. The whole, on the other hand, is common to all and belongs to no one or everyone.<sup>223</sup>

Unsurprisingly, those beholden to narrow compartments of departmental worldviews are unreceptive to pleas toward the whole or the commons. No ship direction can be changed via the same instrument that fuelled the dire direction to begin with. Instead, those in the present tense engine room remain intent on bridging the gulf between what is and what ought to be, by claiming that they can and will contain the demon via global environmental policy. Late modern capitalism drives the dire fantasies of control: both those in power and the ones who live beneath them share the belief that climate change and ecological crisis can be controlled by human mechanisms, without changing the fundamental structures of human existence on this planet.

This fundamental misconception means that no ‘ought to be’ can be realised, because it means that any and all policies are restricted to slowing our ship’s speed, but not changing its direction. Australian artist Tega Brain brings this is-ought and Fact-Concern discrepancy to the fore in her 2015 artwork titled *The*

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<sup>223</sup> Karl Jaspers, *The Atom Bomb and the Future of Man*, translated by Ernst Ashton (Chicago: University of Chicago Press, 1963), vii.

*Intergovernmental Panel on Capitalism* which replicates official IPCC websites and reports, but replaces each mention of “Climate Change” with “Capitalism.”<sup>224</sup>

While Serres was critiquing the first months and years of such frameworks, Brain calls into question the relationship between policy and politics a quarter of a century later. Though, being a philosopher and artist respectively, they are akin to Kubrick throwing stones at the windowless War Room of *Dr. Strangelove*. If artists, intellectuals, and filmmakers are powerless, what then from the mouth of one who has been at the coal face, not only of the science of climatology, but of formulating international energy policy commensurate with throwing a spanner in the post-industrial works?

## Extraordinary Popular Delusions and the Madness of Crowds

Let us not, in the pride of our superior knowledge, turn with contempt from the follies of our predecessors. The study of the errors into which great minds have fallen in the pursuit of truth can never be uninstrusive. As the man looks back to the days of his childhood and his youth, and recalls to his mind the strange notions and false opinions that swayed his actions at the time, that he may wonder at them; so should society, for its edification, look back to the opinions which governed ages that fled.

– Charles MacKay, *Extraordinary Popular Delusions and the Madness of Crowds* (2012) [1841]<sup>225</sup>

Thatcher’s address at the United Nations headquarters in Manhattan and the dinosaurs in Larson’s “Pretty Bleak Picture” are both Town Hall meetings, when collectives of concerned citizens assemble in the same place at the same time, united by shared concern in what each speaker unearths. Whether a village in a jungle, a town by the way, a port by the river, or a city by the bay, Town Hall meetings are for all and one concerned: *with open mouth wide the Stegosaurus ushers the universal sigh to its fellow beings . . .*

Town Halls have fallen by the wayside in the present tense of twenty-first-and-last century megalopolises, though ever so occasionally groups amass to manifest the same ritual, despite all obstacles toward the fractured present and its fractured presence. Kevin Anderson presented all three parts of the universal sigh to one such meeting on 6 November 2012 at the University of Bristol, on the topic of “Real Clothes for the Emperor: Facing the Challenges of Climate Change.” His expertise drew a capacity audience, being one of the world’s foremost climate

<sup>224</sup> Tega Brain and Sam Lavigne, *Intergovernmental Panel on Capitalism*, 2015, accessed 13 December 2015, <http://intergovernmentalpaneloncapitalism.org>.

<sup>225</sup> Charles MacKay, *Extraordinary Popular Delusions and the Madness of Crowds* (London: Simon and Schuster, 2012 [1841]), 336.

scientists, who has also strayed into the politics and policy of energy, as Professor of Energy and Climate Change at the University of Manchester.

With open mouth wide he ushered in the universal sigh to his fellow beings:

I think the Emperor's streaking in front of us naked while most of us are saying "aren't they beautifully attired," including many scientists. I think actually if you stand up and say that the Climate Change Emperor is naked most people will shut you down. They do not want to hear that however obvious it may be.<sup>226</sup>

Over the following hour he repeatedly invoked Hans Christian Andersen's fable about *The Emperor's New Clothes*<sup>227</sup> to eviscerate how the IPCC and UNFCCC significantly downplay the extent to which the trajectory is toward a 6° increase by 2100,<sup>228</sup> rather than the fabulist 2° target that this particular extraordinary popular delusion is still beholden to. In a tone by turns conversational and confrontational, he spoke on graph after graph of past, present, and projected warming rates per emission rates, pointing out the "void"<sup>229</sup> between what we would have to do for 2°, versus what is actually being done. This is a worldview mired in a dire mindset, but with equal measure of acceptance for the Dour, in that closing that void hinges on whether the social limits to human life can learn to live meekly within the biophysical limits to life-at-large, rather than pretend those limits are endlessly plastic to human manipulation.

Anderson's presentation further eviscerated global climate policy, decrying "the delusion that climate change can be addressed adequately through rhetoric, financial fine-tuning and piecemeal incrementalism."<sup>230</sup> In riposte, his presentation declared that only a collective 'ah ha!' acknowledging the Emperor's nakedness would suffice to expose this void between what is necessary, and what is actually being done. Yet, as Charles MacKay reasoned in one of the first studies on crowd psychology, from his 1841 tome on *Extraordinary Popular Delusions and the Madness of Crowds*, people "think in herds; it will be seen that they go mad in herds, while they only recover their senses slowly, one by one."<sup>231</sup>

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226 Kevin Anderson, "Real Clothes for the Emperor: Facing the Challenges of Climate Change," paper presented at The Cabot Institute, University of Bristol, 6 November 2012, accessed 13 December 2015, <http://www.bristol.ac.uk/cabot/events/2012/194.html>.

227 Hans Christian Andersen, "The Emperor's New Clothes," in *Fairy Tales Told for Children* (Copenhagen: C.A. Reitzel, 1837).

228 Kevin Anderson and Alice Bows, "Beyond 'Dangerous' Climate Change: Emission Scenarios for a New World," *Philosophical Transactions of the Royal Society of London A: Mathematical, Physical and Engineering Sciences* 369 (2010): 20–44.

229 Anderson, "Real Clothes for the Emperor."

230 Anderson, "Real Clothes for the Emperor."

231 MacKay, *Extraordinary Popular Delusions and the Madness of Crowds*, 4.

Assuming fideliolous climate science is the child to burst the Emperor's bubble, the watching crowd may only finally "recover their senses" in the face of what Anderson elsewhere describes as the "brutal numbers and tenuous hope" of "climate change going beyond dangerous."<sup>232</sup> There is no safe refuge to recover ones senses, for the numbers are "brutal" and the "hope" is delusional rather than "tenuous."

The "brutal numbers" referred to here are the empty gestures of IPCC projections for global heating over the remainder of the twenty-first-and-last century: Two degrees by 2050, Four degrees by 2100 and so on. This is, in part, the problem: the rupture is still disproportionately perceived in terms of linear climate change, while abrupt non-linear climate change is at best ignored, and at worst denied. These numbers are less expressions of actual inherent and anthropogenic climatic precarity, as they are expressions of a global order that still believes signal can be disentangled from noise, reducing the Earth System to Input A of Emissions B from Country C who contributed Proportion X of Warming Y in Timeframe Z.

This is a worldview that would never dare answer Clark's question, which is itself the subject of the Dour:

What is the point of drawing attention to forces outside our control, at this moment when we are struggling so hard to come to terms with events that we do have some sway over? Why, when a willingness to shoulder responsibility for triggering changes in the global environment still seems so tenuous and tentative, should we take up a concern with a different set of disturbances, with another kind of excessiveness that might well undermine these nascent sensibilities?<sup>233</sup>

Policies derived from such a sheltered worldview are liable to face the same criticism Clark extends to responses from the humanities and social sciences: namely, such policy and responses downplay how the biophysical world works, both irrespective of human influence, and when inundated with human influence. The woefully inadequate framing of climate change, not only in science, but in policy and politics, shows how ill-equipped postwar international frameworks are when faced with fidelity to the enmeshed social and biophysical functioning of the planet.

Following a presentation brimming with statistics, graphs and data, Anderson concluded his lecture with a quote that he claims to "always finish off with,"<sup>234</sup> by the Brazilian philosopher and politician Roberto Mangabeira Unger: "at every

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<sup>232</sup> Kevin Anderson, "Climate Change Going Beyond Dangerous: Brutal Numbers and Tenuous Hope," *Development Dialogue* 61 (2012): 17.

<sup>233</sup> Clark, *Ex-orbitant Globality*, 179.

<sup>234</sup> Anderson, "Real Clothes for the Emperor."



level the greatest obstacle to transforming the world is that we lack the clarity and imagination to conceive that it could be different.”<sup>235</sup> Therein, the summary of how we ended up in the desert *this time*, and how we took our turn to flip the tortoise onto its back.

Those aghast at exhaling the universal sigh sought further clarity during question time, before filing out into the unseasonably warm 10° winter night, already 2° above the Bristol average for that time of year.<sup>236</sup> The 2° guardrail is meant to represent an aggregate for the globe, averaged over the three-decade duration sufficient for when temperature becomes climate. Meanwhile, how many days must exceed the guardrail before we understand the tortoise is well and truly “laying on its back, it belly baking in the hot sun” while we stand and do nothing to help it?

## Pop Goes the Bubble

I may die; but first you, my tyrant and tormentor, shall curse the sun that gazes on your misery. Beware; for I am fearless, and therefore powerful. I will watch with the wiliness of a snake, that I may sting with its venom. Man, you shall repent of the injuries you inflict.

– Mary Shelley, *Frankenstein* (1818)<sup>237</sup>

On 6 November 2012, the lack of “clarity and imagination” to conceive that this world could be different, and the ultimate obstacle it posed to transforming the world manifested itself on an altogether different register: while Anderson was on stage in Bristol delivering the universal sigh, the US was voting between Barak Obama and Mitt Romney for President. The 2012 election showed how Hume’s is-ought dilemma freezes effective action, or indeed any action at all, in that it was distinguished as the first election in a generation where neither the Democrats or Republicans mentioned ‘climate change’ or ‘global warming’ in any campaigns or presidential debates. This contrasted starkly to the subject’s presence, notable as far back as Jimmy Carter’s 1980 campaign. But perhaps not without good reason: arguably Carter lost because his proposed energy and climate policy refused to

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<sup>235</sup> Roberto Mangabeira Unger, quoted in Anderson, “Real Clothes for the Emperor.”

<sup>236</sup> Bristol Airport, day and night temperature records for 6 November 2012, accessed 10 June 2016, <https://weatherspark.com/h/y/39587/2012/Historical-Weather-during-2012-in-Bristol-United-Kingdom>.

<sup>237</sup> Shelley, *Frankenstein*, 303.

pretend the Emperor was clothed,<sup>238</sup> and so the ‘extraordinary popular delusions and the madness of crowds’ punished his honesty.

Newspaper reports of the 2012 campaign frequently lamented both candidates’ self-censorship,<sup>239</sup> with one such *Guardian* headline titled *US Election 2012: Romney and Obama Avoid the Climate Change Elephant*.<sup>240</sup> The elephant-in-the-room only breached that censorship a week before the vote, through the unprecedented magnitude of Hurricane Sandy making US landfall. Newspaper headlines then bluntly declared both Emperors-to-be to be in fact naked, exemplified by CNN three days before the vote: *Sandy Reminds us of Climate Change and Other Forgotten Campaign Issues*.<sup>241</sup>

Despite Sandy’s imposing presence, both Emperors-to-be continued to excise climate change from their political campaigns, even while this ignored and rampaging elephant eviscerated dreams and delusions of shelter from the Big Apple to its hinterlands. The hurricane’s force would have shattered Fuller’s *Dome over Manhattan*, and with it his managerial mindset for controlling *Spaceship Earth*. A Manhattan now directly in the line of fire of intense and volatile weather previously restricted to the tropics would not demand new *Seinfeld* storylines but a new worldview altogether. A Manhattan finally hit by this Bomb would issue the punchline undermining Kubrick’s yearning to *Learn to Stop Worrying and Love the Bomb*. Perhaps the great director would have seen Hurricane Sandy as a portent of the Doomsday Device, for it was not a singular explosion, but a manifestation of the everywhere-all-the-time explosion of global heating.

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<sup>238</sup> Georgiana Banita, “Voting for American Energy: Elections, Oil, and US Culture,” in *Electoral Cultures*, eds. Georgiana Banita and Sascha Pohlmann (Heidelberg: Heidelberg University Press, 2015), 101.

<sup>239</sup> Representative examples of this contemporaneous coverage include: Bryan Walsh, “Why Climate Change Has Become the Missing Issue in the Presidential Campaign,” *Time*, 23 October 2012, accessed 10 June 2016, <http://science.time.com/2012/10/23/why-climate-change-has-become-the-missing-issue-in-the-presidential-campaign/>; John Broder, “Nearly Absent in the Campaign: Climate Change,” *The New York Times*, 25 October 2012, accessed 10 June 2016, <http://www.nytimes.com/2012/10/26/us/politics/climate-change-nearly-absent-in-the-campaign.html>; and Abby Week, “How Obama Softened on Climate Change,” *ABC News*, 2 November 2012, accessed 10 June 2016, <http://abcnews.go.com/blogs/politics/2012/11/barack-obamas-evolution-on-climate-change-a-brief-history>.

<sup>240</sup> Leo Hickman, “US Election 2012: Romney and Obama Avoid the Climate Change Elephant,” *The Guardian*, 24 August 2012, accessed 10 June 2016, <http://www.theguardian.com/environment/blog/2012/aug/24/us-election-2012-romney-obama-climate>.

<sup>241</sup> Dan Merica, “Sandy Reminds Us of Climate Change and Other Forgotten Campaign Issues,” *Cable News Network*, 30 October 2012, accessed 10 June 2016, <http://www.cnn.com/2012/10/30/politics/forgotten-campaign-issues/index.html>.

Sandy was an event that burst many bubbles of imagined shelter, reducing dreams of ‘managing’ climate change to rubble, and screaming over the top of nursery rhyme versions of reality. Sandy was, in some ways, the first impact of the ship’s prow on that rocky bar, driven by human failings (rational, conceptual, political, and scientific) that prevented any change in its direction. Marx cautioned “all that is solid melts to air”<sup>242</sup> in the end game pursuit of industrial capitalism. The hurricane brought the shipwreck not only into the foreground of prosperous Western countries, but onto their most prized real estate, dumping the consequences of an anthropogenically perturbed Northern Polar Jet Stream onto Manhattan Island.<sup>243</sup>

Sandy’s trajectory, unprecedented in modern human history, was just the tip of the iceberg in terms of how “all that is solid melts to air,” as anthropogenic destabilisation of the climate has increased the propensity, intensity, and distribution of phenomena such as the Northern Polar Vortex.<sup>244</sup> Whereas the Northern Polar Jet Stream used to confine the Polar Vortex to Arctic regions back in the halcyon Holocene days, nowadays anthropogenically induced jet stream destabilisation increasingly brings Arctic weather into the longitude between 40° and 50° North – that is, to Europe and the US.<sup>245</sup>

But a once-in-a-millennium event becoming a once-in-a-decade event is apparently also insufficient to induce either US or global acknowledgment that the climate change Emperor has been naked all along. Three years after the 2012 election, the UNFCCC and heads of state gave themselves a standing ovation for the accord reached at their annual Conference of Parties meeting in Paris. Kevin Anderson watched on in horror that they still praise the Emperor’s new clothes, remarking that “it is pantomime season and the world has just gambled its future on the appearance in a puff of smoke of a carbon-sucking fairy godmother.”<sup>246</sup>

That is: their standing ovation proclaimed that the demon would be coaxed back into its bottle of containment by developing Negative Emissions Technologies, which would suck such carbon out of the atmosphere. Rather than change our ship’s direction, we now claim we can make the rocky bar disappear altogether

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242 Karl Marx and Friedrich Engels, *Manifesto of the Communist Party* (Chicago: CH Kerr and Company, 1906 [1848]), 18.

243 Charles Greene, Jennifer Francis, and Bruce Monger, “Superstorm Sandy: A Series of Unfortunate Events?” *Oceanography* 26, no. 1 (2013): 8–9.

244 Judah Cohen et al., “Recent Arctic Amplification and Extreme Mid-Latitude Weather,” *Nature Geoscience* 7, no. 9 (2014): 627–637.

245 Jennifer Francis and Stephen Vavrus, “Evidence Linking Arctic Amplification to Extreme Weather in Mid-Latitudes,” *Geophysical Research Letters* 39, no. 6 (2012): 1–6.

246 Kevin Anderson, “Talks in the City of Light Generate More Heat,” *Nature* 528 (2015): 437.

in a puff of (non-carbon) smoke. Alas, even the desultory conservatism of august global governance bodies continues to sing nursery rhymes of avoidance and shelter, intoning *Three Blind Mice* with scant regard for the bloody breadcrumb trails leading back to the sadistic violence behind the rhyme.

It seems fitting to imagine Charles MacKay watching in horror from beyond the grave, he who lamented in 1841 how “nations, like individuals, cannot become desperate gamblers with impunity. Punishment is sure to overtake them sooner or later.”<sup>247</sup> One hundred and forty seven years later in 2015 Anderson was forced to lament that the Dire “has just gambled its future,” meaning that the comeuppance is definitely now due sooner, rather than later. As Stephen Schneider, then Professor of Environmental Biology and Global Change at Stanford University remarked in 2007, shortly before his death:

Hell, we buy fire insurance based on a 1% chance . . . If we're going to be risk averse . . . we cannot dismiss the possibility of potentially catastrophic outliers and that includes Greenland and West Antarctica (ice sheets breaking up), massive species extinctions, intensified hurricanes and all those things. There's at least a 10% chance of that. And that to me for a society is too high a risk . . . My value judgement when you're talking about planetary life-support systems is that 10%, my God, that's Russian roulette with a Luger.<sup>248</sup>

The analogy between anthropogenic climate change and Russian roulette is a long-standing motif, though Schneider's punchline about the traditional revolver having been replaced with a semi-automatic Luger pistol drove home the escalation seen at the beginning of the twenty-first-and-last century. But even 30 years before Schneider's statement, Wallace Broecker declared in 1987 that

The inhabitants of Earth are quietly conducting a gigantic experiment. So vast and sweeping will be the consequences that, were it brought before any reasonable council for approval, it would be firmly rejected. Yet it goes on with little interference from any jurisdiction or nation . . . We play Russian roulette with climate, hoping that the future will hold no unpleasant surprises. No one knows what lies in the active chamber of the gun.<sup>249</sup>

Broecker's declaration occurred a year before the IPCC was formed and the UN General Assembly ushered in their hollow conceit about their *Protection of Global Climate for Present and Future Generations of Mankind*. Meaning that the stakes and rules for the game of chance being played with our only home have been a

<sup>247</sup> MacKay, *Extraordinary Popular Delusions and the Madness of Crowds*, 51.

<sup>248</sup> Stephen Schneider, quoted in Liz Minchin, “Scientist's ‘Russian Roulette’ Climate Warning,” *The Age*, 29 January 2007, <https://www.theage.com.au/national/scientists-russian-roulette-climate-warning-20070129-ge43g4.html>.

<sup>249</sup> Wallace Broecker, “Unpleasant Surprises in the Greenhouse?”, *Nature* 328, no. 6126 (1987): 124.

long time in the (un)making. Given that the risks are being judged by “desperate gamblers,” the rules require an understanding commensurate with a brief history of running out of time. Anderson, Broecker, and MacKay, though spread over nearly two centuries, all allude to the way risk ties in with notions of potential futures, where outcomes of gambling today may beget vastly different tomorrows.

Before summarising these rules and stakes in terms of Anderson’s statements and how they relate to a dire demeanour, it is first necessary to consider the backstory to the ideas of gambling that MacKay observed in the previous century. The reason for this is quite straightforward: on closer examination, the international order of an IPCC or an UNFCCC owes more to the concept of gambling than it does to the contemporaneous revelations unleashed by N-LSD or Earth Systems Science.

## This Is Not a Pipedream

In the risk society . . . the ability to anticipate and endure dangers, to deal with them biographically and politically acquires importance . . . How do we handle ascribed outcomes of danger and the fears and insecurities residing in them? How can we cope with the fear, if we cannot overcome the causes of the fear? How can we live on the volcano of civilisation without deliberately forgetting about it, but also without suffocating on the fears – and not just on the vapours that the volcano exudes?

– Ulrich Beck, *Risk Society: Towards a New Modernity* (1986)<sup>250</sup>

The Tigris and Euphrates are the two great rivers of Mesopotamia, and, between them, constitute one of the proverbial cradles of civilisation. The details of where and when civilisation first emerged have been lost to time. Only fragments remain – though the valley between the two rivers is a mighty fragment, and, mythical origins aside, has witnessed the rise and fall of many an empire. The city of Mosul, one of the oldest in the world, stands on the banks of the Tigris, 50 kilometres downstream from Mosul Dam.

The dam’s design, engineering, and construction involved an exceptional trade-off between resources and risk, leaving not only Mosul but also other major downstream cities, such as Baghdad, at the behest of a 110-metre wall of water held back by a 113-metre wall of cement. Whereas Fichte traced our “houses on the earth” three levels down, to an elephant, a tortoise, then “the tortoise again,” the team of German and Italian geophysicists left no mystery as to what bedrock lay beneath the proposed dam, what lay beneath the bedrock, and so on. The

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250 Ulrich Beck, *Risk Society: Towards a New Modernity* (London: Sage, 1992 [1986]), 76.



particulars of the site's geology literally began to undermine the dam no sooner than its construction was completed in 1986. It has since provided the city with hydroelectricity, and irrigation for the arid desert surrounds. Having hitched the city to the dam, the sunk costs have required constant injections of material ever since, to shore up leaks and to reinforce the base.

Following more than a decade of alarming reports, in 2016 a team of Iraqi and Swedish geologists and engineers published an article titled the "Mystery of Mosul Dam, the Most Dangerous Dam in the World: Dam Failure and its Consequences."<sup>251</sup> Co-authored by some of the original dam engineers, including the former chief engineer, Nasrat Adamo, the article sought greater certainty about the probability of dam collapse through refined modelling. While the word "mystery" is never mentioned outside of the title, Adamo elaborated on this "mystery" in a *Guardian* article titled "Mosul dam engineers warn it could fail at any time, killing 1m people." Therein Adamo concluded that "nobody knows when it will fail. It could be a year from now. It could be tomorrow."<sup>252</sup> In light of the report, Iraq's Prime Minister Haider al-Abadi and the US embassy in Baghdad issued statements on the perceived state of heightened risk, obfuscating their inability to attend or alleviate the risks for those downstream of the potential cataclysm.

Bursting "the bubble of civilisation"<sup>253</sup> is a mere metaphor for many, but for those downstream from Mosul Dam it is a literal, everyday affair. For those already downstream, beyond where "we can dream of diversion and escape," to reprise Clark,<sup>254</sup> this human-scaled cataclysm is a literal affair that may eventuate "a year from now" or "it could be tomorrow," even if it still appears as a metaphor for those who believe themselves to live upstream of the dam wall.

Mosul Dam may indeed be miniscule and insignificant on the scale of the planet, let alone the cosmos. Yet because of its volatility and incapacity for repair it stands as a particularly telling scaled-down version of the unfolding rupture: abrupt climatic cataclysm could happen at any 'moment', and the alternating panic, denial, or fantasies of management that support a dire demeanour will be

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<sup>251</sup> Nadhir Al-Ansari et al., "Mystery of Mosul Dam, the Most Dangerous Dam in the World: Dam Failure and its Consequences," *Journal of Earth Science and Geotechnical Engineering* 5, no. 3 (2015): 95–111.

<sup>252</sup> Nasrat Adamo, quoted in Julian Borger, "Mosul dam engineers warn it could fail at any time, killing 1m people," *The Guardian*, 2 March 2016, accessed 1 May 2017, <https://www.theguardian.com/world/2016/mar/02/mosul-dam-engineers-warn-it-could-fail-at-any-time-killing-1m-people>.

<sup>253</sup> Charlotte Du Cann, Anthea Lawson, and Tom Smith, "Introduction," in *Dark Mountain: Refuge – Ten Years on the Mountain* (Oxford: Dark Mountain Books, 2018), 5.

<sup>254</sup> Clark, *Inhuman Nature*, 31.

empty gestures when the time comes, just as panic, denial, or fantasies about ‘solving’ the ‘problem’ are no help to the inhabitants of Mosul and Baghdad.

The dam cannot be comprehensively strengthened while the water is within, for how could the wall be accessed? The dam cannot be drained, for where would the water go while the wall is repaired or rebuilt? And even if it could be drained, where would the cities and farmlands get their water meanwhile? And where would the water come from to refill an empty dam? Neighbouring countries are not prone to letting precious water leave their borders. The dam cannot be deconstructed: in a society no longer used to such standards of living, a city with water tanks on every rooftop does not a habitable city make. The cities cannot be permanently evacuated, for where do cities go when there is no available land to be moved to?

The concrete cannot be coaxed into stronger tensegrity: what was laid down is literally set in stone. The laws of geology cannot be muted because they are immutable: strata will compose and recompose, just as plate tectonics play out irrespective of activity on earth’s surface. The laws of chemistry cannot be muted because they are immutable: water will dissolve concrete foundations, just as it does the karst bedrock beneath. The laws of physics cannot be muted because they are immutable: the wall of water will exert its pressure come ruin, revelry or revolution. The language of law, liability, regulation, and policy can only mask the cracks for so long – once they are visible to the naked eye of the layperson, the Kafkaesque absurdity of modern bureaucracy is laid bare, just like the naked Emperor’s body in the *Emperor’s New Clothes*.

The chasm between known knowns and known unknowns about whether one’s world will collapse “tomorrow” or “a year from now” is what sociologist Ulrich Beck termed a “Risk Society” in 1986 – the same year Mosul Dam was completed. Industrial civilisation lives in the shadow of existential risks inherited from the past, whether a dam wall, MAD nuclear deterrence policy, or human-induced climate change. And these risks only compound all those unknown unknowns residing in the “cataclysm upstream” of humanity.

The dam, the Bomb, the Tomb in the Enewetak Atoll, and the changed climate have already been brought into the world. Critiquing the myopia that gave rise to such short-sighted choices is as futile as trying to revise history. It does not yield a lesson for how to do things better next time round, because there is not going to be a next time during which a civilisation will notionally get it right. Just as F. Scott Fitzgerald declared “there are no second acts in American lives,”<sup>255</sup> there are no second acts in the unfolding rupture.

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255 F. Scott Fitzgerald, *The Last Tycoon* (New York: Charles Scribner’s Sons, 1941), 163.

There is only the dam as it stands: an edifice crumbling at the seams, plugged with thumbtack-level solutions, where each thumbtack pushed in presses the dam water to find another passage through the cancerous concrete. There is only the world as it stands: today, and the cataclysmic tomorrow that could come “a year from now”<sup>256</sup> or in the morning.

Trade-offs between today and tomorrow are one and the same as between resources and risk. Should you bank on strength X to withstand force Y over time period Z? And what when force Y has deviations both standard and stochastic? To live in the “Risk Society” is to live on “the volcano of civilisation,”<sup>257</sup> wherein we build houses to create the illusion of stability and safety despite the fact that we are building on the back of a fundamentally unstable World Turtle, into whose working we have thrown our sticks, stones, and radioactive waste, thus rendering something already unstable now completely volatile. Mosul Dam is an obvious candidate for a volcanically-hitched civilisation: the result of deliberate human intervention based on false conceptions of the stability of the rock beneath our feet and our own capacity for control and regulation, now yielding a precarious, unpredictable, and cataclysmic entity that can come crashing down “a year from now” or “tomorrow.”<sup>258</sup>

Yet even if all societies – ancient, modern, and industrial – were pitched on a volcano of some sort or another, we cannot acquit ourselves simply by claiming we perched our civilisation on a volcano: this mistakes the smoke for the fossilised trees of Petrified Forest National Park in Arizona. Civilisation *is also* the volcano that has exacerbated the planet’s intrinsic volatility and enhanced its destructive potential via its ‘civilised’ means of production. Exhuming energy and heat from the subsurface of earth, civilisation has acted like a volcano, drawing up and combusting fossil fuels to channel the heat and energy into the atmosphere. The exhausted man-made mines are like siblings to the volcano caldera left behind after an eruption, once a volcano’s contents have erupted into the atmosphere. In a nutshell: civilisation manifests existential risks which are self-manufactured.

All civilisations have existed perched atop a volcano, courtesy of the cosmic vicissitudes to which all life is behest. But only the present civilisation can claim to be a *volcano perched atop a volcano*. The difference lies in what precepts and conceits have been inherited from when civilisations did not build dams, only to

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256 Adamo, quoted in Borger, “Mosul Dam Engineers Warn It Could Fail.”

257 Beck, *Risk Society*, 76.

258 Adamo, quoted in Borger, “Mosul Dam Engineers Warn It Could Fail.”

live in fear in their shadow, but whose houses, built more feebly on the earth, were nonetheless a trade-off between resources and risk.

When the Indonesia volcano of Krakatoa erupted in 1883 it unleashed a 40-metre-high tsunami on West Java, the landmass closest to the eruption. One of the most formidable structures to be obliterated by the tsunami was the 40-metre-high Cikoneng lighthouse on the West Java sea shore. Only for it to be rebuilt two years later, an impressive 18 metres higher, and 50 metres back from the shore. But despite the new lighthouse then being one of the tallest in the world, all design can only be measured against its correlate: the vicissitudes of the Earth System. Just as all human intentions can only be measured against the radical asymmetry and contingency of life on earth to the cosmos to which it is hitched. After all, disaster originally meant an ‘ill-starred event’ – where earthly outcomes were ascribed their cosmic origins. As Clark writes, this event is one

that we cannot simply turn into an object of knowledge – for such is its force and shock that it dismantles the very platforms from which we apprehend reality. And yet, even as the disaster overwhelms our taken-for-granted senses and sensibilities, it also challenges us to try and begin sensing, thinking, acting in new ways. It ends the world, and begins it turning anew.<sup>259</sup>

The lighthouse, seeking to ward ships from shipwreck, obliterated by a volcano-cum-tsunami. The fiery origins of the disaster lie deep in the belly of the earth and resist all attempts to “simply turn [them] into an object of knowledge,” just as lighthouses, as “platforms from which we apprehend reality,” are obliterated in the aperiodic wake of such events. The old platform base of the destroyed lighthouse stands next to its replacement, which shows that prior disasters only mildly challenge us “to try and begin sensing, thinking, acting in new ways.”

Singular instances of a contemporary Iraqi dam or an historical Indonesian lighthouse may appear poor proxies for Anderson and MacKay’s respective cautions about climate change risks played by nation state gamblers. But they only appear impoverished because both are proximal: one dam collapse or tsunami, and the rest of the show soldiers on. As distal phenomena, true ruptures are inexorably more complex, as are their spatial and temporal repercussions. Only a rupture “ends the world, and begins it turning anew” as per the changeability and consequence that comprise the first and second parts of the universal sigh, uttered by Stegosaurus on his endling podium.

Though singular instances still provide a portal into how proximal phenomenon become distal disasters. The Great East Japan Earthquake of 11 March 2011

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<sup>259</sup> Nigel Clark, “Geo-politics and the Disaster of the Anthropocene,” *The Sociological Review* 62, no. 1 (2014): 21–22.

was one of the most powerful ever recorded. It lasted six minutes, and in that time it moved the coastline of Honshu, shifted the earth on its axis by up to 25 centimetres, and minutely increased the rotational speed of the planet.<sup>260</sup> But it also unleashed a tsunami that ruptured the Fukushima nuclear power plant, spreading nuclear radiation across oceans and throughout food-chains. The disaster displays the spatial and temporal scale of climate change in several ways, but the planet cannot be reset upon its axis, nor the radiation genie put back into the fusion reactor bottle, rather different parts of it will dissipate over millennia of millennia throughout the globe.

Over the decade prior to the Fukushima accident external and internal reports to the energy company argued that the height of the sea-wall was vastly insufficient for a proverbial once-in-a-millennium tsunami.<sup>261</sup> But to budget for the once-in-a-blue moon requires exorbitantly more resources: thicker, taller, stronger sea-walls, dams, and lighthouses. The economic comparison of risks to resources makes tomorrow's budgeting look like squandering today. Yet the nuclear meltdown continues to be read as a lesson for how to do things better next time round – where next is no longer another millennium, as the bubble of a once-in-a-millennium periodicity has been burst by the breach. Just as the UNFCCC still refuse to acknowledge their Emperor is naked, so do their Japanese counterparts, though in relation to risk and resources for generating energy.

Differentiating between proximal and distal phenomena has a bearing on our present tense, because moments that have repercussions for the entire planet beg their distinction. We act in the proximal, just as we live in it. It is how the world is mediated: the proximal is literally only ever right here and right now, wherever and whenever those happen to be. But the cumulative effects of collective human action now extend to the realm of the distal. Despite this, the dominant worldview regards the predicament as a proximal one, like viewing Cook and Tu'i Malila's arrival in Tonga as the origin of the cataclysm upstream. Such a worldview encompasses only the most obvious and instantaneous, with scant regard for the insidious.

Instead, we now need to live in the distal, given it is the domain that we invited ourselves to play in: having attained distal agency, we can no longer afford to remain cowering in the sheltered conceit of the burst proximal bubble. Beck describes the precarity of so doing in his *Risk Society* thesis as *Living on the*

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<sup>260</sup> Heiner Igel et al., "Observations of Earth's Toroidal Free Oscillations with a Rotation Sensor: The 2011 Magnitude 9.0 Tohoku-Oki Earthquake," *Geophysical Research Letters* 38, no. 21 (2011): 1–5.

<sup>261</sup> Noriko Behling et al., "Aftermath of Fukushima: Avoiding Another Major Nuclear Disaster," *Energy Policy* 126 (2019): 411–420.

*Volcano of Civilisation – The Contours of the Risk Society*. This title to the first part of his thesis features a heading of “Dealing with Insecurity: An Essential Qualification,” wherein Beck asks, somewhat rhetorically:

How can we live on the volcano of civilisation without deliberately forgetting about it, but also without suffocating on the fears – and not just on the vapours that the volcano exudes?

Given that all forms of shelter just continually reveal their hollow conceits, the answer to “how can we live on the volcano . . .?” can only come from radically new notions of our expectations: of risk, of danger, of predictability, of probability, of periodicity, and, most importantly, of tomorrow and all subsequent tomorrows to come.

## Seven Decades of Minutes to Midnight

The era of procrastination, of half-measures, of soothing and baffling expedients, of delays is coming to its close. In its place we are entering a period of consequences.

– Winston Churchill, Debate on the Address, United Kingdom Parliament, 12 November 1936<sup>262</sup>

In the dark times

Will there also be singing?

Yes, there will also be singing

About the dark times.

– Bertolt Brecht, “Deutsches Lied” (1976 [1939])<sup>263</sup>

The persistent background hum of pestilence has been running for so long that the clock appears to have stopped. In 1947, the year the Cold War started, the *Bulletin of the Atomic Scientists* unveiled their *Doomsday Clock*, expressing how many minutes to midnight remained within the margin of error of human-caused global cataclysms. The clock started at seven minutes to midnight: however ominous the dire straits that Chaplin satirised in *The Great Dictator* in 1940, the measure of desperation had shifted to a whole other register a mere seven years later.

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<sup>262</sup> Winston Churchill, “Debate on the Address speech in United Kingdom Parliament,” transcript of speech delivered at United Kingdom Parliament, HC Deb vol 317 cc1081-155, 12 November 1936, accessed 6 May 2019, <https://api.parliament.uk/historic-hansard/commons/1936/nov/12/debate-on-the-address>.

<sup>263</sup> Bertolt Brecht, “Deutsches Lied,” in *Bertold Brecht, Poems 1913-1956*, eds. John Willett, Ralph Manheim, and Erich Fried (London: Eyre Methuen, 1976), 320.

This particular clock, the one that measures a brief history of running out time, while not even keeping time, was conceived by Manhattan Project scientists who formed the *Bulletin* in 1945, aghast at the Hiroshima and Nagasaki atom bombs. During the Cold War the clock hovered around five minutes to midnight, and with the *Bulletin* now folding in human-caused climate change into the cataclysms mix, it stands at 90 seconds to midnight.<sup>264</sup>

While Nicholas Wade was epistemically incorrect to accuse Hansen of “crying wolf on greenhouse warming”<sup>265</sup> in his 1989 *New York Times* op-ed, he was correct in saying that crying wolf will not work. The alarm bells have been ringing for so long they have become subsumed into the background noise of civilisation. Time has stood still for the past seven decades, while the clock of our crisis has drawn ever closer to the end game. In any event and any eventuality, whether it is five, two, one, three, or four minutes to midnight matters not: when we speak in minutes to midnight, it is already too late.

It is clearly not 1pm, when the greenhouse effect in earth’s atmosphere was first experimentally proven in 1861 by UK physicist John Tyndall.<sup>266</sup> Nor is it 1:30pm, when the anthropogenic influence of fossil fuelled energy combustion on global climate was first made public in 1896 by Swedish physical chemist Svante Arrhenius.<sup>267</sup> Nor is it 4pm, when the term ‘global warming’ was first used in Wallace Broecker’s 1975 article “Climatic Change: Are we on the Brink of a Pronounced Global Warming?”<sup>268</sup> Nor is it 11pm when Bill Clinton declared that “unless we act now, we face a future in which the sun may scorch us, not warm us; where the change of season may take on a dreadful new meaning.”<sup>269</sup> That ‘now’ was Earth Day 1993.

The list goes on and on but the number of hours on the clock hand do not. The hour is at hand. When the clock striketh 12 it has one of two places left to go. No clock face can resist gravitational forces – its hand must fall clockwise on toward 1, or anticlockwise backward to 11. A revolution is anything that comes full

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264 Bulletin of the Atomic Scientists, “Doomsday Clock,” *Bulletin of the Atomic Scientists* 100 seconds to midnight, accessed 30 November 2024, <https://thebulletin.org/doomsday-clock>.

265 Wade, “Crying Wolf in the Greenhouse.”

266 John Tyndall, “The Bakerian Lecture: On the Absorption and Radiation of Heat by Gases and Vapours, and on the Physical Connexion of Radiation, Absorption and Conduction,” *Philosophical Transactions of the Royal Society* 151 (1861): 1–36.

267 Svante Arrhenius, “On the Influence of Carbonic Acid in the Air upon the Temperature of the Ground,” *Philosophical Magazine and Journal of Science* 5, no. 41 (1896): 237–276.

268 Wallace Broecker, “Climatic Change: Are we on the Brink of a Pronounced Global Warming?”, *Science* 189, no. 4201 (1975): 460–463.

269 Bill Clinton, “Remarks on Earth Day, 21 April 1993,” transcript of speech delivered at US Botanic Gardens, 21 April 1993, 630, accessed 6 May 2019, <https://www.govinfo.gov/content/pkg/WCPD-1993-04-26/pdf/WCPD-1993-04-26-Pg630.pdf>.



circle. Midnight is no matter of concern – it will be a passing face of deep darkness, which will be drawn inexorably onwards or backwards into another *New World Coming*. And, in the deeper eventuality of time, the clock-hands of that world(s) will settle at six – where no gravitational force will be able to shift them onwards, by the same principle of the second law of thermodynamics, which will inevitably submit this clockface to universal heat death.

Finally, we have arrived home, by way of Stuart Kauffman's *At Home in the Universe: The Search for the Laws of Self-Organization and Complexity*. Home, if it is to be anywhere, can only ever be found in a dour demeanour, and its absolute fidelity to the inhospitable nature of the cosmos. It is cold comfort, but comfort nonetheless:

The second law of thermodynamics has been thought to be rather gloomy. One almost imagines the grave headlines: UNIVERSE RUNNING DOWN. HEAT DEATH HEADED OUR WAY. DISORDER IS ORDER OF THE DAY. How far we have come from the blessed children of God, at the centre of the universe, walking among creatures created for our benefit, in a garden called Eden. Science, not sin, has indeed lost us our paradise.<sup>270</sup>

Kauffman speaks of how the entropy of all that is and ever was, whether cell or solar system, can only increase. All roads lead to Rome, and all Romes lead to ruin.

While the Dour maintains that the radioactive waste from The Tomb on Enewetak Atoll will inevitably all leach out eventually, just as all the oceans will dissipate into space, the Dire draws a line that states the entropy of human-released demons must be countered with control. Most notably, the Dire is preoccupied with the most ominous outstanding question of what the contemporary threshold is for crossing critical tipping points, most notably runaway climate change. And, more disturbingly, whether that particular one has already been crossed, given that the jet-lag between cause and effect in climate change means the event may only become known after the fact, by which point it is too late to remedy.

Against such known unknowns lies the known known: that this roughly five-decade inertia of the climate system is such that the climate unravelling now is due to emissions released into the atmosphere when Nina Simone released *New World Coming* in 1971. This is coupled with signal masking through airplane contrails, air pollution, and shipping pollution. So, it seems safe to hazard a guess that substantial climatic destabilisation has already been committed. Even if all releases ceased today, the act has taken place.

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<sup>270</sup> Stuart Kauffman, *At Home in the Universe: The Search for the Laws of Self-Organization and Complexity* (Oxford: Oxford University Press, 1995), 10.

In their above quotes Churchill and Brecht both refer to the rise of Nazism and the trajectory toward war. In 1936 Churchill was already lamenting that time had run out to forestall either. Brecht too had seen the writing on the wall, having gone into exile from his German homeland on 28 February 1933, one month after Hitler became Chancellor and one day after the Reichstag fire. The times have been dark for quite some time, and there has been “singing/About the dark times” for quite some time too. The *Doomsday Clock* has been running far longer than the Doomsday Device satirised in *Dr. Strangelove*. Which is to say that the twentieth-and-second-last century gave good for setting up present tense existential anxiety. Roll the roll call: World War One, World War Two, Fascism, Communism, Korea, Vietnam, the ‘Spanish flu’, Cambodia, Chernobyl, AIDS, Rwanda, Afghanistan, Ebola, Coronavirus, “The Bomb, Dmitri, The Bomb . . .”

While the unfolding rupture truly suffers no comparison in its consequence or magnitude, we twenty-first-and-last-centurians might be thankful in a way to the twentieth-and-second-to-last. Rather than all other things being equal, imagine all other things being other: no world wars, no modern plagues or genocides, no Bomb, no nuclear accidents. The rest of society otherwise much the same (inequality, corruption, nepotism, chicanery, and introverted narcissism), but without any of the above conflicts or catastrophes to warm us up for a truly planetary crisis, or an ever-present potential for near instantaneous self-annihilation.

Along comes the ecological crisis. We would have little-to-no reference point. A world that was not already on the razor’s edge of volatility, even if it was only social, economic, political, military volatility, would have no reference point for how to live in turbulent times. The benefit of the last century’s inheritance is not overt. Perhaps that is asking too much: a benefit confers a benefit. Conversely, the mindset of the Dire has been so pervasive for such a long time that ratcheting up the minutes-to-midnight from five to two barely registers a murmur. Leaving nothing to be done, before two becomes one and then none, but to consider the age-old question of what is life (at the end of empire)?



**Fig. 11:** 270 Broadway, Manhattan, site of the original Manhattan Project HQ during World War Two, United States of America, 20 November 2019. Photograph by author.