

## Introduction: Theory for the Warming Condition

### NEVER IN THE HEAT OF THE MOMENT

Is there any time left in this world? In an essay published in *New Left Review* in 2015, Fredric Jameson restated his thirty-year-old diagnosis of postmodernity as the 'predominance of space over time'.<sup>1</sup> We continue to live on a stage where there is nothing but the present. Past and future alike have dissolved into a perpetual now, leaving us imprisoned in a moment without links backwards or forwards: only the dimension of space extends in all directions, across the seamless surface of a globalised world, in which everyone is connected to everyone else through uncountable threads – but time has ceased flowing. Or, as Jameson originally put it in *Postmodernism, or, The Cultural Logic of Late Capitalism*: 'We now inhabit the synchronic rather than the diachronic, and I think it is at least empirically arguable that our daily life, our psychic experience, our cultural languages, are today dominated by categories of space rather than by categories of time, as in the preceding period of high modernism.'<sup>2</sup> This shift of dimensions,

1 Fredric Jameson, 'The Aesthetics of Singularity', *New Left Review* II: 92 (2015): 105. For an inventory of Jameson's thesis and its fortunes over the three decades, see the special issue of *Social Text* 34 (2): (2016).

2 Fredric Jameson, *Postmodernism, or, The Cultural Logic of Late Capitalism* (London: Verso, 1991), 16; see further Fredric Jameson, 'The End of Temporality', *Critical Inquiry* 29 (2003): 695–718.

more than anything else, marks the onset of postmodernity: and here we are, still.

The diagnosis hinges on the eradication of nature. Jameson's argument runs something like this: in the modern era, vast fields of old nature remained spread out between the bustling new centres of factory and market. A short drive would take the modernist back to the rural village where she was born; ancient ways of life dotted every horizon, the modern mode speeding up within a landscape tied to the natural and immemorial. It was this contrast that made the modernists *feel* the movement of time – from the old to the new, towards the future – that so fundamentally structured their culture. Now the foil is gone. Peasants, lords, artisans, costermongers have vanished from sight and, along with them, 'nature has been triumphantly blotted out'.<sup>3</sup> In place of villages, there are suburbs; no matter how far the postmodernist drives, she will encounter inhabitants of the same cultural present, watching the same programmes or – to update the analysis – posting pictures on the same networks. The new is the only game in town, and by the same token it loses its meaning and lustre, and instead of moving onwards we seem to be forever stuck in the automated marketplace of the monotonously novel. Postmodernity, then, 'is what you have when the modernization process is complete and nature is gone for good'; without 'the idea of nature and the natural as some ultimate content or referent' there can be no sense of time, and we are stranded in the mega-city where glass surfaces mirror each other, where images and simulacra rule over night and day, where the free play of masks and roles goes on and on without any real, material substance.<sup>4</sup>

But towards this city a storm is on the move.

<sup>3</sup> Jameson, *Postmodernism*, 309.

<sup>4</sup> *Ibid.*, ix, 392. For this analysis of the end of nature as the end of temporality and historicity, see further e.g. 35, 49, 307–11, 365–6; Jameson, 'End', 699; Fredric Jameson, *Late Marxism: Adorno, Or, The Persistence of the Dialectic* (London: Verso, 2007), 95–6; Fredric Jameson, *The Cultural Turn: Selected Writings on the Postmodern, 1983–1998* (London: Verso, 2009), 54–70.

The condition of Jameson's postmodernity is recognisable in life in New York City as depicted in Ben Lerner's fine novel *10:04*. Fabrication and semblance seem to govern the protagonist's every step. He is working to forge a correspondence with renowned authors. A friend asks him to become the father of her child, but not through sexual intercourse; instead he embarks on a laborious process of watching porn flicks, masturbating and handing over his semen to artificial insemination. His head spins from a twenty-four-hour installation called *The Clock*, a montage of clips from thousands of movies integrated in a rolling sequence, so that a scene of lightning staged at 10:04 in *Back to the Future* is replayed at exactly that moment in the real time of the audience, and so on throughout night and day, performing 'the ultimate collapse of fictional time into real time'.<sup>5</sup>

Lerner's New York, however, is under siege. The novel begins with the approach of 'an unusually large cyclonic system' and ends with the cataclysmic landfall of another. 'Houses up and down the coast had been obliterated, flooded, soon a neighborhood in Queens would burn. Emergency workers were fishing out the bodies of those who had drowned during the surge; who knew how many of the homeless had perished?' A point of irrefutable reality pierces the narrative. It submerges the protagonist in a flow of very palpable time: he looks back on 'six years of these walks on a warming planet'. When Union Square turns 'heavy with water in its gas phase, a tropical humidity that wasn't native to New York, an ominous medium', ordinary time is shut down, the air 'like defeated time itself falling from the sky'.<sup>6</sup> The protagonist sinks into obsession with temporality, as he ruminates over what he believes to be the source of all these storms: climate change.

Recent efforts in 'event attribution' corroborate the belief. Every particular storm is the unique outcome of a chaotic mix of weather components, but global warming alters the baseline where these are

<sup>5</sup> Ben Lerner, *10:04* (London: Granta, 2014), 54.

<sup>6</sup> *Ibid.*, 16, 231, 7, 18, 220.

formed. 'The climate is changing: we have a new normal', one team of researchers submits: 'The environment in which all weather events occur is not what it used to be. All storms, without exception, are different.' Thus superstorm Sandy, which knocked out large parts of New York in October 2012, rode forth on sea levels elevated by some 19 centimetres; high sea surface temperatures sent extraordinary amounts of water vapour into the air as ammunition for the clouds.<sup>7</sup> Similar factors beefed up supertyphoon Haiyan – the strongest recorded storm ever to strike land, up to that point – as it ripped through the Philippines in November 2013, killing more than 6,000 people and leaving bodies bobbing on the sea for weeks.<sup>8</sup> 'No single event can be attributed to climate change', runs a popular media refrain, but a spurt of observation and modelling is now confirming the common intuition that all of this extreme weather would not have happened without it. Individual incidents may very well be pinned on the rise in temperatures, with a scientific accuracy improving by the year. Already when the earth had warmed as little as 0.85°C, three out of four recordings of extreme heat on land could be derived from the general trend, and as temperatures continue to climb, it will claim an even larger share of the causation.<sup>9</sup> The experience is becoming well-nigh universal: a majority of the human population has been exposed to abnormally

warm weather over the past decade.<sup>10</sup> Such man-made weather, however, is never made in the present.

Global warming is a result of actions in the past. Every molecule of CO<sub>2</sub> above the pre-industrial level resides in the atmosphere because humans have burnt trees and other plants and, preponderantly, fossil fuels over the course of time. In the beginning, the carbon in coal, oil and natural gas was locked into the crust of the earth; then at some point, those reserves were located and exploited and the fuels delivered to fireplaces, whence the carbon was released as CO<sub>2</sub>. At any given moment, the excess of heat in the earth system is the sum of all those historical fires, of the cumulative emissions, the pulses of CO<sub>2</sub> stacked on top of each other: the storm of climate change draws its force from countless acts of combustion over, to be exact, the past two centuries. *We can never be in the heat of the moment, only in the heat of this ongoing past.* Insofar as extreme weather is shaped by basal warming, it is the legacy of what people have done, the latest leakage from a malign capsule – indeed, the air is heavy with time.<sup>11</sup>

When Walter Benjamin roamed the cities of interwar Europe, he jotted down a signpost for further investigation: 'On the double meaning of the term *temps* in French': *temps* as in weather and time.<sup>12</sup> Most likely, the semantic overlap is rooted in the primordial experience of the seasonal cycle drawing the calendar of labour, the olden days when sun, cloud, rain and snow set the rhythm of hunting, sowing, reaping and all sorts of other activities. Then came an era when (some) people lived as though insulated from the weather – 'our seasons', Jameson notes, 'are of the post-natural and post-astronomical television and media variety' – but slowly or

7 Kevin E. Trenberth, John T. Fasullo and Theodore G. Shepherd, 'Attribution of Climate Extreme Events', *Nature Climate Change* 5 (2015): 725–30; quotation from 729. Cf. Andrew R. Solow, 'Extreme Weather, Made by Us?', *Science* 349 (2015): 1445–5; Friederike Otto, Geert Jan van Oldenborgh, Jonathan Eden et al., 'The Attribution Question', *Nature Climate Change* 6 (2016): 813–16; Peter Stott, 'How Climate Change Affects Extreme Weather Events', *Science* 352 (2016): 1517–18.

8 Izuru Takayabu, Kenshi Hibino, Hidetaka Sasaki et al., 'Climate Change Effects on Worst-Case Storm Surge: A Case Study of Typhoon Haiyan', *Environmental Research Letters* 10 (2015).

9 E. M. Fischer and R. Knutti, 'Anthropogenic Contribution to Global Occurrence of Heavy-Precipitation and High-Temperature Extremes', *Nature Climate Change* 5 (2015): 560–5; Peter Stott, 'Weather Risks in a Warming World', *Nature Climate Change* 5 (2015): 516–7.

10 Flavius Lehner and Thomas F. Stocker, 'From Local Perception to Global Perspective', *Nature Climate Change* 5 (2015): 731–5.

11 On cumulative emissions and related temporalities of climate change, and for references, see further Andreas Malm, *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming* (London: Verso, 2016), 4–8.

12 Walter Benjamin, *The Arcades Project* (Cambridge, MA: Harvard University Press, 2002), 106.

suddenly, the connotation is reinserting itself in everyday life.<sup>13</sup> This time, however, the weather presents anything but a reliable clock. It tends to upset schedules and routines by dint of the weight it carries from the past. The tempest has a twisted, multiplex temporality, as registered by Lerner's protagonist, who compulsively reports days of 'unseasonable warmth' when walking down October streets:

The unusual heat felt summery, but the light was distinctly autumnal, and the confusion of seasons was reflected in the clothing around them: some people were dressed in T-shirts and shorts, while others wore winter coats. It reminded him of a double exposed photograph or a matting effect in film: two temporalities collapsed into a single image.<sup>14</sup>

Even more apposite might be his sensation of 'having travelled back in time, or of distinct times being overlaid, temporalities interleaved', for every impact of climate change is, by physical definition, a communication with a human past.<sup>15</sup>

But the links do not only run backwards. The shadow of anthropogenic CO<sub>2</sub> covers the foreseeable and extends into the unfathomable future. A team of the most prominent scientists working on this particular aspect point out that 2100, the year where most scenarios and projections abruptly end – there will be this or that much sea level rise until 2100, this or that much extreme heat – has no real terminal status. The widespread usage of the benchmark is an accident of computer technology, early models having been unable to carry scientists any further. Graspable and convenient, it creates, the team argues, the illusion that the future now in the balance is a relatively short one, a headache for the

13 Jameson, *Cultural*, 59.

14 Lerner, *10:04*, 63. Cf. e.g. 107, 153, 206, 231. On the etymological association of tempest and temporality, see Bronisław Szerszynski, 'Reading and Writing the Weather: Climate Technics and the Moment of Responsibility', *Theory, Culture and Society* 27 (2010): 24.

15 Lerner, *10:04*, 67.

twenty-first century, when in fact the bulk of the rise in temperature and practically all sea level rise produced by any given amount of cumulative emissions will hang on – if it is left to the earth system to work out the consequences – for at least the next 10,000 years, the seas potentially peaking at a level around 50 metres higher than today. Much of this can still be avoided. That possibility supercharges our moment with time. 'The next few decades', the team concludes, 'offer a brief window of opportunity to minimize large-scale and potentially catastrophic climate change that will extend longer than the entire history of human civilization thus far.'<sup>16</sup> An eternity is determined now.

For every year that total decarbonisation of the world economy is postponed – not to speak of every year when emissions are stable or increasing – the shadow of committed warming extends further into the future.<sup>17</sup> For every such year, more impacts become unavoidable. There have already been many years of that kind. Hence, a string of scientific papers coming out in 2014 and 2015 indicated that the main section of the West Antarctic ice sheet has been pushed over its tipping point and is destined to undergo irreversible meltdown, while, even more spectacularly, an equally large glacier on the eastern part of that continent – long believed to be safe from warming – may likewise be sliding towards the sea.<sup>18</sup>

16 Peter U. Clark, Jeremy D. Shakun, Shaun A. Marcott et al., 'Consequences of Twenty-First-Century Policy for Multi-Millennial Climate and Sea-Level Change', *Nature Climate Change* 6 (2016): 360–61.

17 See e.g. Patrik L. Pfister and Thomas F. Stocker, 'Earth System Commitments Due to Delayed Mitigation', *Environmental Research Letters* 11 (2016).

18 E. Rignot, J. Mouginot, M. Morlighem et al., 'Widespread, Rapid Grounding Line Retreat of Pine Island, Thwaites, Smith, and Kohler glaciers, West Antarctica, from 1992 to 2011', *Geophysical Research Letters* 41 (2014): 3502–9; Ian Joughin, Benjamin Smith and Brooke Medley, 'Marine Ice Sheet Collapse Potentially Under Way for the Thwaites Glacier Basin, West Antarctica', *Science* 344 (2014): 735–8; J. S. Greenbaum, D. D. Blankenship, D. A. Young et al., 'Ocean Access to a Cavity Beneath Totten Glacier in East Antarctica', *Nature Geoscience* 8 (2015): 294–8; Fernando S. Paolo, Helen A. Fricker and Laurie Padman, 'Volume Loss from Antarctic Ice Shelves is Accelerating', *Science* 348 (2015): 327–31.

'Whatever we do now', popular magazine *New Scientist* announced, probably with some exaggeration, 'the seas will rise at least 5 metres'.<sup>19</sup> The motion of glaciers being proverbially slow, the scientific consensus has long held that it would take several millennia for a sea level rise of such a scale to materialise, but one of the most sensational papers in recent years contends that ice equivalent to 'several meters' could, in the worst-case scenario, plunge into the oceans *already this century*, much of it during the lifetimes of plenty of young people now in streets near shorelines.<sup>20</sup> With all of these figures, constantly revised and updated, scientists seek to represent the assault from some past curse or ancestral sin ever more difficult to escape. Lerner's protagonist imagines the city soon underwater.<sup>21</sup>

Some history, then, is back: the panic that climate change so easily induces is really a panic in the face of history, our reaction when it dawns on us what they – those who once lit the fossil fires, spread them and still keep them burning – have done to us and our children. Sometimes that history makes a lunge at the present. In December 2015, at the conclusion of COP 21 in Paris, the leaders of 195 nations declared with much fanfare that they would limit the temperature increase to 'well below 2°C above pre-industrial levels' and 'pursue efforts' to stop it at 1.5°C.<sup>22</sup> That year was the first to reach the landmark of 1°C.<sup>23</sup> Hardly had the leaders stopped cheering and congratulating themselves on their achievement and flown home from Paris before the warming took a sudden leap: in February 2016, the average temperature on earth stood at an

19 Michael Le Page, 'Five Metres and Counting', *New Scientist*, 13 June 2015.

20 J. Hansen, M. Sato, P. Hearty et al., 'Ice Melt, Sea Level Rise and Superstorms: Evidence from Paleoclimate Data, Climate Modeling, and Modern Observations that 2°C Global Warming Could be Dangerous', *Atmospheric Chemistry and Physics Discussion* 16 (2015): 3761–812.

21 Lerner, *10:04*, e.g. 40, 107–8, 153.

22 United Nations Framework Convention on Climate Change, 'Adoption of the Paris Agreement', 12 December 2015, 22 (available from unfccc.int)

23 World Meteorological Organization, '2015 Is Hottest Year on Record', public.wmo.int, 25 January 2016.

estimated 1.5°C above pre-industrial levels – exactly where it should not be, according to the pledge of two months earlier.<sup>24</sup> Scientists were left scrambling for superlatives to convey the bizarre weather. In the northernmost Arctic, anomalies of 6°C were detected, adding to the impression that the climate system was careening deep into the heat COP 21 had vowed to forestall.<sup>25</sup>

Come July 2016, *Nature* published a paper claiming to demonstrate that both Paris targets were likely beyond reach. Some of the heat generated by an excess of CO<sub>2</sub> in the atmosphere is drawn down by the oceans and stored in their depths for several decades before being released into the air, and because of this time lag, the full realisation of the warming commensurate to any CO<sub>2</sub> concentration is deferred. With current levels – even if no more CO<sub>2</sub> were ever to be emitted – the planet is already doomed 'to a mean warming over land greater than 1.5°C' and quite possibly 'greater than 2.0°C', according to this particular study.<sup>26</sup> Come November, December and the first anniversary of the Paris agreement, temperatures in the Arctic were no longer 1.5 or 2 or 6 but a dizzying 20 degrees hotter than normal.<sup>27</sup> 2016 ended as yet another hottest year on record, on average 1.3°C above pre-industrial levels in one estimate, 1.1°C in another.<sup>28</sup> Clearly, the world was already

24 Glen Peters, 'The "Best Available Science" to Inform 1.5°C Policy Choices', *Nature Climate Change* 6 (2016): 646–9.

25 Chris Mooney, 'Scientists Are Floored by What's Happening in the Arctic Right Now', *Washington Post*, 18 February 2016.

26 Chris Huntingford and Lina M. Mercado, 'High Chance that Current Atmospheric Greenhouse Concentrations Commit to Warmings Greater than 1.5°C Over Land', *Nature Scientific Reports* 6 (2016): 5.

27 John Vidal, '"Extraordinarily Hot" Arctic Temperatures Alarm Scientists', *Guardian*, 22 November 2016.

28 Copernicus Climate Change Service: 'Earth on the Edge: Record Breaking 2016 Was Close to 1.5°C Warming', <https://climate.copernicus.eu>, 5 January 2017; WMO, 'WMO confirms 2016 as hottest year on record, about 1.1°C above pre-industrial era', <https://public.wmo.int>, 18 January 2017; Damian Carrington, '2016 Hottest Year Ever Recorded – and Scientists Say Human Activity to Blame', *Guardian*, 18 January 2017.

brushing the threshold set up one year earlier in Paris. Now, none of these developments were in any way the products of *what happened immediately after COP 21*. The stunning heat records of 2016 were not due to emissions made in the meantime, but the delayed detonation of fuels burnt much earlier. If the Paris pledges were so quickly ground to dust, as it seems at the moment of this writing, it was indeed the past that overtook the present, in a manner that seems rather like the new normal; by the time this book is printed, these records will in all likelihood be obsolete, and so on.

More storms, then, are to be expected. On the cover of E. Ann Kaplan's thoughtful study *Climate Trauma: Foreseeing the Future in Dystopian Film and Fiction*, a red-haired woman stares at a large cyclonic system rolling in from the horizon. Before turning to the flood of apocalyptic films inundating screens in recent years, Kaplan tells the story of how she herself was caught up in Hurricane Sandy and at one point, as she tried to return to her apartment by climbing dark stairs, suffered a panic attack. The experience led her to develop the syndrome of 'pretrauma' – not the usual post-traumatic stress disorder, in which people suffer past wounds, but rather 'fear of a future terrifying event of a similar kind'. Our culture as a whole, Kaplan suggests, is now developing pretrauma. With more and more film, television, literature, journalism inflected by the creeping insight that catastrophic climate change is approaching, consumers of popular culture make up 'a pretraumatized population, living with a sense of an uncertain future and an unreliable natural environment'. In the film from which the cover shot is taken, the protagonist has a series of nightmares and violent hallucinations about monster storms, descends into a spiral of angst and lashes out at his friends: "There's a storm coming and not one of you is prepared for it." If this growing genre is obsessed with the future, it is only, Kaplan argues, on the basis of an 'awareness of a traumatic past' that has stacked the deck against the time to come.<sup>29</sup>

29 E. Ann Kaplan, *Climate Trauma: Foreseeing the Future in Dystopian Film*

That past, about which nothing can by definition be done, is the source of the future storm.

Now contrast this with Jameson's diagnosis of postmodernity as a condition of synchronic space devoid of time and nature. There is no synchronicity in climate change. Now more than ever, we inhabit the diachronic, the discordant, the inchoate: the fossil fuels hundreds of millions of years old, the mass combustion developed over the past two centuries, the extreme weather this has already generated, the journey towards a future that will be infinitely more extreme – unless something is done *now* – the tail of present emissions stretching into the distance . . . History has sprung alive, through a nature that has done likewise. We are only in the very early stages, but already our daily life, our psychic experience, our cultural responses, even our politics show signs of being sucked back by planetary forces into the hole of time, the present dissolving into past and future alike. Postmodernity seems to be visited by its antithesis: a condition of time and nature conquering ever more space. Call it *the warming condition*.

#### SOME TASKS FOR THEORY

The history circling back in the warming condition is not of the buoyant modernist kind, not a bristling flow of events linked by purpose and direction, anything but a bandwagon to jump on: rather it is frozen. Nor is the nature now returning of the intact variety Jameson finds in the interstices of modernity: rather it appears to be melting. Yet history and nature they seem to be, and society looks like it is beginning to reel under them. The warming condition is still, however, far from constituting a total 'cultural logic' in Jameson's sense. Indeed, climate fiction (or cli-fi) in film and literature notwithstanding, one might argue that most culture still *ignores* the facts of global warming and that *denial* is the real hallmark of the present, stretching from the quotidian suppression

and Fiction (New Brunswick: Rutgers University Press, 2016), xix, 53, 12.

of the knowledge of what is going on, across the topographies of social life up to the man who won the United States presidential election in November 2016, just as Arctic temperatures went completely off the charts. As for politics in advanced capitalist countries, climate change is utterly overshadowed by issues of immigration and the nation. We shall save some words on that order of priorities for later. As for the panoply of cultural expressions, it would be a tough assignment to show that the changing climate is profoundly altering the way we write, communicate, build, plan, view, imagine as Jameson holds that postmodernity did. Nor does the latter explode like a bubble the moment it comes into contact with the rising temperatures – to the contrary, it is proving very resilient and inflatable indeed.

The age of the omnipresent screen can, of course, be seen as the highest stage of postmodernity, an ever-expanding house of mirrors in which illuminated surfaces reflect each other, free of any outside, shadow, memory or long-term expectation. Permanent connectivity enacts 'the final capitalist mirage of post-history', Jonathan Crary writes in his searing *24/7: Late Capitalism and the Ends of Sleep*: it is the consummation of a homogeneous present, a space where the past has been erased and everything can be accessed on demand, in an instant. Not only does it negate natural rhythms, such as the need for sleep; it also offers a cloister away from the new *temps*. 'The more one identifies with the insubstantial electronic surrogates for the physical self, the more one seems to conjure an exemption from the biocide underway everywhere on the planet.'<sup>30</sup> The more one withdraws into the virtual cocoon, the more one detaches from things taking place in nature. If this assessment is correct, and if the technologies of electronic immersion continue to advance, which seems a certainty, then the postmodern condition is still eminently capable of protecting and even expanding its territory.

<sup>30</sup> Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep* (London: Verso, 2013), 9, 100.

It is hard not to interpret the plague that descended on the Western world in the summer of 2016 as a case in point. There were moments when one could not have an evening stroll through a park without feeling that nearly everyone roamed around – faces expressionless, eyes glued to phones – chasing some target that only existed in the virtual realm. How many walks on this warming planet were now conducted in the quest for Pokémon, including in New York and other cities threatened by rising seas? Rarely had the condition of digital life – a sphere without time or nature – invaded so much public space, even kicking off marches, stampedes, gatherings and other forms of collective pseudo-action for the joy of being in the world while not being there. In a dense, suitably bleak riff on Theodor Adorno titled 'Media Moralia: Reflections on Damaged Environments and Digital Life', Andrew McMurry stipulates that 'the new media ecology roars in to fill the void left as old nature exits'. Lending new meaning to 'sleepwalking', the postmodern condition has sunk more deeply than ever into the mind *in step with* the warming. 'The external world', the one where that warming takes place, McMurry continues, 'is now obscure, mostly irrelevant, and, when sensed at all, sensed remotely': between it and us, digital media stand as impenetrable 'veils'.<sup>31</sup> Or, in the words of Kate Tempest: 'Staring into the screen so / we don't have to see the planet die.'<sup>32</sup>

But if the postmodern condition in its digital stage can wrap people up in mental clothing that protects them from contact with the biocide, it is locked in struggle with a formidable enemy. For the warming condition has a whole set of biogeochemical and physical laws on its side. They ensure that its incursions will become deeper and more frequent over time; by force of the nature of the process, climate change has an inbuilt tendency to worsen and

<sup>31</sup> Andrew McMurry, 'Media Moralia: Reflections on Damaged Environments and Digital Life', in Greg Garrard (ed.), *The Oxford Handbook of Ecocriticism* (Oxford: Oxford University Press, 2014), 493, 497.

<sup>32</sup> Tempest, *Let Them Eat Chaos* (London: Picador, 2016), 67.

swamp pretty much everything else. How many will play augmented reality games on a planet that is 6°C warmer? Moreover, denial, particularly in its suppressive and obsessive forms, is a negative confirmation. It suggests that the thing is there, everywhere, only just below the surface, a distressing presence in the collective subconscious – perhaps global warming is, to use another term of Jameson's, a political unconscious that already pervades culture. Perhaps its intolerable implications are in themselves so many incentives to flee into something like augmented reality. Be that as it may – and we shall return to the phenomenon of denial – when climate change seeps into consciousness, it brings with it a realisation that *more and worse is coming*. Truly at the cutting edge, the warming condition is directed towards the future, like the woman on the cover of *Climate Trauma*. It will make itself felt. If postmodernity is a malaise of amnesia and displacement – as though time and nature had in fact disappeared – we might think of the warming condition as a *realisation*, in the dual sense of the term, of a more fundamental illness or wrongness in the world.

Three pathways are competing to be that realisation. 1.) Business as usual continues to run amok, the 1.5°C as well as the 2°C targets are missed, temperatures rise towards 3, 4, 6 degrees of warming within this century, and the material foundations for human civilisation crumble one after another. 2.) The fossil economy is knocked down, preferably within a few decades, warming slows down and then ceases, and civilisation proceeds apace. 3.) There is geoengineering. Intermediate and mixed paths are conceivable – particularly combinations of 2 and 3, or 1 and 3 – but the enormous forces unleashed into the earth system and the long postponement of genuine mitigation now rule out a smooth ride to renewed climate stability. The space for moderate outcomes and half-measures has receded. In the event that path 2 is pursued with maximum global determination and the worst scenarios safely averted, the transformations – technological, economic, political, surely also cultural – will have to be on such a scale as to seal the victory of climate over pretty much the rest of human life, at least for some time, until its

destabilisation becomes a memory. Such is the logic of Naomi Klein's theorem 'this changes everything', whatever course it takes.

Needless to say, global warming is only one facet of the biocide, but among the many ongoing processes of environmental crisis, it has a special inner propulsion and potential for generalised destruction. With its dependence on the past and future directionality, its temporal logic contradicts hyper-spatial postmodernity head on. It represents history and nature falling down on society; it clouds the horizon. A theory for the present should home in on it as an unfolding tendency and learn how to track this storm. It ought to probe the emerging condition and the basic parameters for acting within it: what, for a start, is this nature that is now returning? Does it still deserve that name? Is it not so mixed up with society as to disqualify the very notion? If it is indeed nature, how has it ended up in this terrifying shape? Who or what has whipped up this storm system – the forces of matter, or of humanity, or some agent fusing or straddling the two? By what route does history move into something once thought to be so timeless as the climate of the entire planet?

Great blender and trespasser, climate change sweeps back and forth between the two regions traditionally referred to as 'nature' and 'society'. As it happens, contemporary theory is intensely preoccupied with precisely that escalating interpenetration and churns out books, articles, special issues, conferences, all sorts of scholarly conversations on some critical general questions: whatever is this thing called nature? How does it relate to society? Who are the genuinely powerful players in the drama that weaves the two together; how do humans attach to material objects; are technologies or relations running the show; what constitutes an ecological crisis; what can we ever know about any of all this? Here we find various forms of constructionism, actor-network theory, new materialism, posthumanism, the metabolic rift, capitalism as world-ecology and a host of other conceptual apparatuses, all trying to come to grips with the imbroglia between the social and the natural. Can any of them provide a map of the path the storm is



taking? This essay sets out to scrutinise some of the theories circulating at the nature/society junction in the light of climate change.

Now, theory does not seem like the most exigent business in a rapidly warming world. There is that itching feeling that the only meaningful thing to do now is to let go of everything else and physically cut off fossil fuel combustion, deflate the tyres, block the runways, lay siege to the platforms, invade the mines. Indeed, the only salubrious thing about the election of Donald Trump is that it dispels the last lingering illusions that anything else than organised collective militant resistance has at least a fighting chance of pushing the world anywhere else than head first, at maximum speed, into cataclysmic climate change. All has already been said; now is the time for confrontation. This essay presents no arguments for restraining such impulses. It is, however, written in the belief that some theories can make the situation clearer while others might muddy it. Action remains best served by conceptual maps that mark out the colliding forces with some accuracy, not by blurry charts and foggy thinking, of which there is, as we shall see, no shortage. Theory can be part of the problem. If everything is up for re-evaluation in a warming world, this must apply to it as well: theory too is called to account, required to demonstrate its relevance and declare its contributions, even if some of its producers and consumers would never consider joining some direct action against fossil fuels.

The present essay does not invent this trial; as we shall see, the theories under scrutiny are moving towards agreement on the climate issue as their shared litmus test, the concrete question each must answer to prove its worth.<sup>33</sup> Some more specific criteria could then be set up. An adequate theory should be able to grasp the problem as *historical*, as it has arisen through change over time – the birth and perpetual expansion of the fossil economy – and causes change over time on earth. It should make sense of the very

33 On climate as a litmus test, cf. McKenzie Wark, *Molecular Red: Theory for the Anthropocene* (London: Verso, 2015), e.g. 169, 180.

act of digging up fossil fuels and setting them on fire. Even if the theory is formulated from within the capitalist heartlands, it should, not the least importantly, take heed of the circumstance that global warming makes early landfall in places where the modernisation process has not been completed. People who lack the most basic amenities, who cannot afford to take up residence inside any house of mirrors, who continue to subsist on the kind of nature that Jameson found blotted out from the American cities of the 1980s stand first in the firing line. Most of the bodies fished out from the rising seas belong to them.

A place like New York City can bounce back from a storm and switch on its screens again, but the warming condition is hard to shake off in the Philippines. Hence the much-reported results from a survey by the Pew Research Center in 2015: 79 percent of the inhabitants of Burkina Faso claimed to be 'very concerned' about climate change, compared to only 42 percent of the Japanese, who were far more afraid (72 percent) of the Islamic State.<sup>34</sup> Burkina Faso is being wrecked by climate change *in this moment*, storms of dust and sand – known locally as 'the red winds' – burying what crops remain on land parched from ever more erratic rain.<sup>35</sup> The pattern of greater concern in developing countries is persistent. GDP correlates negatively with the feeling: to a far higher degree than their conspecifics in the US or UK, people in countries like Brazil and Bangladesh tend to view the problem as *very serious*, although the unease is surely domestically stratified as well.<sup>36</sup> As a

34 Laetitia van Eeckhout, 'Winds of Climate Change Blast Farmers' Hopes of Sustaining a Livelihood in Burkina Faso', *Guardian*, 7 July 2015.

35 Ami Sedghi, 'Climate Change Seen as Greatest Threat by Global Population', *Guardian*, 17 July 2015.

36 Hanno Sandvik, 'Public Concern Over Global Warming Correlates Negatively with National Wealth', *Climatic Change* 90 (2008): 333–41; So Young Kim and Yael Wolinsky-Nahmias, 'Cross-National Public Opinion on Climate Change: The Effects of Affluence and Vulnerability', *Global Environmental Politics* 14 (2014): 79–106; Alex Y. Lo and Alex T. Chow, 'The Relationship Between Climate Change Concern and National Wealth', *Climatic Change* 131 (2015): 335–48.

double realisation, the warming condition arrives first among masses possessing no significant property, primarily in the peripheries of the capitalist world-economy. It is an old truth that the human condition is expressed in its most concentrated, ominous form among such masses: hence any theorisation should have its antennas directed towards them. An event like Hurricane Sandy is so significant because it sends the signal home.

What, then, can theory for the warming condition inspire, other than despair? Put differently: if both the 1.5°C and 2°C guardrails turn out to have been breached, should we conclude that the storm is raging uncontrollably and that we might just as well start playing the fiddle? No. We should conclude, first of all, that building a new coal-fired power plant, or continuing to operate an old one, or drilling for oil, or expanding an airport, or planning for a highway is now irrational violence. The case can be made that large-scale fossil fuel combustion has always constituted violence, as it inflicts harm on other people and species, and that it has been plainly irrational since the wide diffusion of the basics of climate science, but surely it reaches a new level of demented aggression when temperatures have increased by 1.5°C or a sea level rise of several metres has been locked into the earth system. If the resistance against fossil fuels has been feeble up to that point, it ought to become ferocious after it: *even after all this, you still go on*. The fight is to minimise the losses and maximise the prospects for survival. What, more concretely, can it achieve? We shall offer only some very brief and provisional reflections on this question towards the end. For now, we shall begin from the premise that any theory for the warming condition should have the struggle to stabilise climate – with the demolition of the fossil economy the necessary first step – as its practical, if only ideal, point of reference. It should clear up space for action and resistance.

#### DISCOVERING COAL ON LABUAN

But to theorise this present, we need a picture of the sort of past that is weighing on it.

In the second quarter of the nineteenth century, the British Empire deployed steamboats to extend its control over territories and accelerate its appropriation of resources from around the world. They required coal. Agents of the imperial machine – officers, engineers, merchants – were instructed to keep their eyes open for coal seams wherever they sat foot, such as on Borneo, where a missionary happened upon some outcroppings in 1837. His discovery touched off a rush for the black gold on that far-flung island, positioned right on the highway between India and China, potentially a perfect fuel depot for the steamboats now frequenting their shores. The most exciting reserves were located on a small island called Labuan. Off the northern tip of Borneo, a most suitable port of call, Labuan was covered by luxuriant tropical forests, and right in their midst, thick veins of coal protruded.<sup>37</sup>

The lieutenant in the Royal Navy leading the expedition later reconstructed the scene in a lithograph. It shows two puny white men pointing at a seam of coal standing out between high trees and a stream of water. The man in the right corner is dressed in the uniform of a Royal Navy officer: he represents the military power by which the Empire has landed in this jungle. With a wondrously erect posture, his eyes turned towards the officer, the other man gesticulates wildly and enthusiastically at the finding; most likely, he envisions the coal as a source of fortune, a material his business can extract and sell to steamboats, not the least those operated by the Navy.<sup>38</sup> The scene exudes excitement, a sense of mastery and proprietary right. It registers the moment when foreign shores are integrated into the fossil

37 For details on the British exploitation of coal on Labuan, see Andreas Malm, 'Who Lit this Fire? Approaching the History of the Fossil Economy', *Critical Historical Studies* 3 (2016): 215–48.

38 Cf. the reading of the picture in Andrew Francis, *Culture and Commerce in Conrad's Asian Fiction* (Cambridge: Cambridge University Press, 2015), 1.

economy – a distinctly British invention, most simply defined as an economy of self-sustaining growth predicated on the growing consumption of fossil fuels and therefore generating a sustained growth in CO<sub>2</sub> emissions.<sup>39</sup> The coal of Labuan had never before been connected to any such pursuits. The native population knew about it, but had left most of it untouched: only with the arrival of the British was the coal hauled into a circuit that expanded by setting it on fire.



First the fuel was in the ground, still and unstirred; then someone came to the scene and, eyeing profit and power, commenced its exploitation. In this regard, the lithograph provides an *Urbild* of the fossil economy. It is, if you will, a picture of the Fall (and downwards like a fall, into a shaft the ground, is the fundamental movement of that economy). The uncountable repetitions of the same act over the past two centuries form the defeated time now pouring down from the sky. How can we apprehend that process?

<sup>39</sup> For more on the fossil economy and the British invention of it, see Malm, *Fossil*.

## Conclusion: One step back, two steps forwards

### FROM THE DAY BEFORE TOMORROW

A genealogy of the main ideas we have here scrutinised and discarded would take us back to the old rhizome of post-structuralism and other postmodernist thinking. More generally, these ideas are outpourings or reflections of the postmodern condition, insofar as they cannot come to terms with nature and history and their imbrications. In the warming condition, they are ideas from the yesterday that refuses to let go.

More specifically, the theoretical obliteration of nature mimics the practical attempts by capital to subsume it under the law of value – indeed, as many anti-constructionists have argued, it is the latter that makes the former seem plausible.<sup>1</sup> Only in a society that strives to turn every bit of nature into profit can the idea that nature has no independent existence take root. For Steven Vogel, merely to suggest that there is some realm called nature that humans cannot shape is to preach ‘a religious idea’.<sup>2</sup> But only under a ruling class that believes itself so godlike that it can substitute its

<sup>1</sup> See e.g. Kidner, ‘Fabricating’; Eileen Crist, ‘Against the Social Construction of Nature and Wilderness’, *Environmental Ethics* 26 (2004): 5–24; Plumwood, ‘Towards’; Plumwood, ‘Concept’; Newton, *Nature*, 41–2; Hailwood, *Alienation*, 57, 61, 64, 85.

<sup>2</sup> Vogel, *Thinking*, 238.

power for all others can the notion of nature as such appear offensively religious. Constructionism swims with the current when what is needed is an affirmation of nature as something *other* than the commodity.

New materialism, for its part, continues the postmodernist tradition of making a virtue out of the crisis of political agency.<sup>3</sup> Together with its siblings, it had to be the child of the enduring conjuncture of defeat and not, say, of the 1920s or the 1960s. If constructionism mirrors the forces that run roughshod over nature, new materialism reflects the lack of control over them and the apparent implausibility of any scheme for reining them in: when capital seems more solid and rocklike than the earth itself, the sensation of overwhelming thing-power might creep up easily. Jane Bennett justifies the material/nonhuman turn with 'the voluminous mountains of "things" that today surround those of us living in corporate-capitalist, neoliberal, shopping-as-religion cultures.' These mountains demand that we give the alluring objects themselves – the commodities – 'pride of place in our thinking'.<sup>4</sup> Certainly, new materialism has scored a more profound ontological success in this regard than most of its predecessors, by crowning the things the heirs apparent of agency. The wealth of societies in which the capitalist mode of production prevails appears as an immense collection of thing-kings.

Hybridism takes joy in transgression. Capitalism, Eagleton reminds us, is a system for 'restlessly transgressing boundaries and dismantling oppositions'.<sup>5</sup> And as Plumwood herself has pointed out, some boundaries we would be better off respecting: opening a rainforest for oil exploration muddies the lines between the natural and the social, and there is nothing to celebrate about that.<sup>6</sup> Hybridism is the theoretical mirror image of the homogenising

3 On this tradition, cf. Eagleton, *Illusions*, 13–17.

4 Bennett, 'Systems', 224.

5 Eagleton, *Illusions*, 133.

6 Plumwood, 'Towards', 46.

bulldozer of capital.<sup>7</sup> It is encountered some circles down in environmental hell.

#### TRAVEL BACK IN TIME

If modernity was the epoch when time moved forwards and post-modernity that when it stood still, there was always the possibility of it starting to move backwards.

Trying to escape the punishing sun, Osama Sayed and his seven-year-old son, Ahmed, take shelter beneath a bush. 'It's like we've travelled back in time, having to wait with jars for the water carrier', says Sayed. Severe water cuts have repeatedly forced him and the 5,000 other farmers living in this small Nile Delta village to wait hours, sometimes even days, for drinking water, amid a severe heatwave in the Middle East,

the *Guardian* reported in August 2015.<sup>8</sup> Expect more gifts of history to be withdrawn, one after the other, primarily from those who never received very many of them in the first place. Historicised nature is pushing back.

#### UTOPIA, SIMULACRA, DYSTOPIA

It is tempting to draw up a neat dialectical scheme of three emblematic aesthetic modes: utopia for the modern, simulacra and pastiche and related forms for the postmodern, followed by dystopia for the warming condition, representing the interlinked historical moments of progress-defeat-disaster. Referring to mostly American films and novels, E. Ann Kaplan observes that 'utopian discourses have given way to dystopian imaginaries on a scale rarely seen in

7 C.E. Crary, 24/7, 12–13.

8 Mohamed Ezz and Nada Arafat, '“We Woke Up in a Desert”: The Water Crisis Taking Hold across Egypt', *Guardian*, 4 August 2015.

earlier aesthetic periods.' Whereas the undercurrent of modern dystopias – Lang's *Metropolis*, Orwell's *1984*, Huxley's *Brave New World* – expressed anxieties over Fordism and totalitarianism, and while alien invasion films stretched the imagination to the utmost, Kaplan sees the 'pretrauma' form extending collapse to all ordered social life and relocating it to a place and time near the consumer, with some connection to extreme scenarios in science. Here 'future time is a major theme', but the trauma flows from the feeling of 'not having a future at all'.<sup>9</sup>

But there are at least four reasons to consider the possibility that such dystopia might be only a regional mode for the warming condition. First, it is stoked up by the *expectation* of disaster, just around the corner or on very early visitation. But if climate catastrophe were to become a generalised state of affairs, would that type of narrative about the future hold any traction? Second, if the climate movement and its various allies are to make any real dent in the curves, they probably – one of the key contentions of Klein – have to reinvigorate, recycle, reroute utopian impulses. Third, if fantasies of apocalypse are the order of the day in Hollywood, they seem to be somewhat rarer in Bollywood and Nollywood; a schema of utopia-simulacra-dystopia would be modelled on a particular Western sequence not necessarily corresponding to developments elsewhere. Perhaps events like Sandy really are enough to fuel some vague fantasy of losing everything among those who have it all. (And perhaps the production of credible apocalypses still requires the most advanced media technologies.)

Fourth, it is too early to count out postmodern culture: as we suggested earlier, it might not stand in any absolute contradiction to a warming world, but could rather inflame it further. The quip by Fredric Jameson that so eminently sums it up – 'it is easier to imagine the end of the world than the end of capitalism' – would then identify a crossing from the postmodern to the warming condition, on which traffic ceaselessly flows. There would be more

of a parallelism or dialectic between the two – both originating, of course, in a specific capitalist modernity – than a mutual exclusion. And perhaps that is also, again, one additional reason why concern is so much more rife in the poor than in the advanced parts of the capitalist world. A herder in Burkina Faso or a farmer in the Nile Delta has fewer screens to flee into. Conversely, perhaps it is wrong to say that the warming condition is one of realisation: perhaps it should rather be thought of as fundamentally fractured, rent in two, with denial and escape on the one side and realisation and suffering on the other *and the former guaranteeing the continuation of the latter*.

#### FORMS OF RETROGRESSION

If current trends are anything to go by, the warming condition looks set to be an era of retrogression, ecologically and politically. One of its greatest pathologies is surely the superabundance of energy thrown into the demonisation of refugees, Muslims, Mexicans, various otherwise coded others in advanced capitalist countries, while climate change receives barely a sliver of the attention. The non-threat of immigration tops the headlines and debates every day, while the super-threat of actually unfolding global warming struggles to make it there even when the most sensational records are reported. This is not a random fact about our times. As Rachel E. Goldsmith and her colleagues point out, fossil energy is a bane entirely internal to the system, but immigrants and other others can be framed as *external* enemies, so much more convenient a target of aggression.<sup>10</sup> Who knows what subconscious traffic there might be from the former irritant to the latter outflow. Be that as it may, the rise and rise of the far right evidently has no equivalent at the green or red-green end of the spectrum. A visitor from the future might marvel at this irrationality: but perhaps there is also some reciprocity or homology between the two trends. There

9 Kaplan, *Climate*, 8, 4, 69.

10 Goldsmith et al., 'Gender', 163.

are moments when the slide towards the right appears to accelerate in lockstep with the increase in temperatures. Devolution in ecosystems – say, ‘the rise of slime’ in the oceans: the ascent of jellyfish and toxic algae, the descent of coral reefs and apex species – has a fitting counterpart in the current state of Western politics.<sup>11</sup>

The far right is, of course, the first to bewail how everything is getting worse by the day and shed tears over lost splendour, translating into the universal formula ‘make X great again’. Testimony to the declensionist *zeitgeist*, this current never fails to attack what actual progress has been made in recent decades – in the departments of gender, culture, welfare and, at least in certain northern European countries, the belated dissolution of white ethnic homogeneity – thereby accumulating the force of a tidal wave of reactionary slime rolling over the globe. This is the leading edge of degeneration *including in the sphere of climate*. How are the links forged? In *Climate Crisis, Psychoanalysis, and Radical Ethics*, Donna M. Orange chases the ghosts of colonial history that haunt this warming world and suggests that an unprocessed history of enslaving others primes privileged white people to callousness. ‘Blindness to our ancestors’ crimes, and to the ways we “whites” continue to live from these crimes, keeps the suffering of those already exposed to the devastation of climate crisis impossible for us to see or feel.’<sup>12</sup> And the crimes compound: against non-whites as immigrants *and* as victims of climate change. Then maybe there is some historical accumulation coming back to drive terror into the present on both planes. Consider, one last time, the picture from Labuan: does it portray the shared roots of the fossil economy and modern racism? The moment when white men with money and guns act out their belief that the jungle and its inhabitants, held conveniently invisible, are theirs to trample upon? Is colonial

11 Jeremy B. C. Jackson, ‘Ecological Extinction and Evolution in the Brave New Ocean’, *Proceedings of the National Academy of Sciences* 105 (2008): 11458–65.

12 Donna M. Orange, *Climate Crisis, Psychoanalysis, and Radical Ethics* (London: Routledge, 2017), 39.

aggression – Bloch’s ‘slave-driver and the East India Company’ – more than an apt metaphor for capitalist technology based on fossil fuels? Have nature and non-whites been subjected to one and the same juggernaut, and if so, would it be so strange if the warming condition – this long fallout of subsumption – would also entail some climax of racism?

These questions aside, global warming is certainly not the sole disaster of the future in the making. Being of such magnitude, the warming would be unimaginable as a deviation from some generally wholesome trajectory. In that sense, it deserves a place, again *mutatis mutandis*, similar to that of Auschwitz in the writings of Adorno: as a catastrophe in which society as a whole discharges itself.

#### AGAINST AFFIRMATION

The warming condition spells the death of affirmative politics.<sup>13</sup> Negativity is our only chance now. Some version of Benjamin’s destructive character must be rehabilitated:

The destructive character has the consciousness of historical man, whose deepest emotion is an insuperable mistrust of the course of things and a readiness at all times to recognize that everything can go wrong . . . What exists he reduces to rubble – not for the sake of the rubble, but for that of the way leading through it . . . It is Nature that dictates his tempo, indirectly at least, for he must forestall her. Otherwise she will take over the destruction herself.<sup>14</sup>

13 A startling example of affirmative politics in this age of disaster is Braidotti, *Posthuman*. For a brilliant critique of the fashion of affirmationism – which counts Latour, new materialism and posthumanism as some of its greatest poster children – see Noys, *Persistence*.

14 Walter Benjamin, *Selected Writings, Volume 2, part 2, 1931–1934* (Cambridge, MA: Harvard University Press, 2005), 540–1.

## FOR PANIC

For someone safely ensconced in a life and material position under no immediate threat from climate change, such as the average Western academic, the only way to stay conscious of the lashing urgency of the problem is to subject oneself regularly, weekly or daily, to news from the frontiers of this warming world. In July 2016 – summed up worldwide as the hottest month ever recorded – temperatures soared to the limit of liveability in the areas around the Persian Gulf. In Basra, they hit 54°C.<sup>15</sup> Twenty-six-year-old student Zainab Guman told the reporter of the *Washington Post* that she avoided leaving her home during the day throughout the summer, for stepping outside is like ‘walking into a fire’: ‘It’s like everything on your body – your skin, your eyes, your nose – starts to burn.’<sup>16</sup> In November 2016, Bolivia declared a state of emergency as the cities of La Paz and El Alto ran out of water. The glaciers feeding the cities in dry periods have shrunk or disappeared, leaving the reservoirs empty, forcing the state to impose water rationing and dig frantically for reserves. People queued for hours on end with buckets.<sup>17</sup> In July and September, two glaciers in Tibet

15 Michael Slezak, ‘July 2016 Was World’s Hottest Month since Records Began, Says Nasa’, *Guardian*, 16 August 2016; Jason Samenow, ‘Two Middle East Locations Hit 129 Degrees, Hottest Ever in Eastern Hemisphere, Maybe the World’, *Washington Post*, 22 July 2016.

16 Hugh Naylor, ‘An epic Middle East heat wave could be global warming’s hellish curtain-raiser’, *Washington Post*, 10 August 2016. See further Jeremy S. Pal and Elfatih A. B. Eltahir, ‘Future Temperature in Southwest Asia Projected to Exceed a Threshold for Human Adaptability’, *Nature Climate Change* 6 (2016): 197–200; J. Lelieveld, Y. Proestos, P. Hadjinicolaou et al., ‘Strongly Increasing Heat Extremes in the Middle East and North Africa (MENA) in the 21st Century’, *Climatic Change*, 137 (2016): 245–60.

17 John Rocha, ‘Shrinking glaciers cause state-of-emergency drought in Bolivia’, *Guardian*, 28 November 2016. See further Nick Buxton, Marisa Escobar, David Purkey and Nilo Lima, ‘Water Scarcity, Climate Change and Bolivia: Planning for Climate Uncertainties’, Stockholm Environment Institute, Discussion Brief, 2013, sei-international.org.

suddenly collapsed in implosions that left scientists flabbergasted, each setting off avalanches that covered some ten square kilometres of land with broken ice and strewn boulders.<sup>18</sup> In late 2016, the *Guardian* published a series of dispatches from villages in eastern Sudan being engulfed in sand. Swings between drought and torrential downpours spoil the soil, river levels fall, once fertile fields turn into cracked crusts and forests into drifting deserts. ‘It’s especially scary when the house is covered [in sand] at night and you can only wait in the dark until morning to dig your way out’, said 70-year-old Hamud El-Nour Hamdallah.<sup>19</sup> Over in Bangladesh, villages are instead abandoned to the rising sea: ‘“The ocean is torturing us,” said Pushpo Rani Das, 28, a mother of three who has had to move her home four times to escape storm surges. “We can’t stop it. Water enters my house in every high tide, especially in the rainy season.”’<sup>20</sup>

This war remains sorely underreported. There is still no *Planet of Slums* or *High Tide* that maps the permanent state of climate emergency settling over the global South. But the science keeps coming: one study published in *Nature Climate Change* in September 2016 used simulations and historical records to calculate how much the global wheat yield will decline per centigrade increase in temperature. On average 5.7 percent, it found, but with large variations: hot countries – those in or near the tropics, holding most of poor humanity – will suffer greater losses: 11–20 percent in Upper Egypt, compared to some 4 percent in France.<sup>21</sup> From Antarctica, scientists reported a batch of fresh discoveries. Ice shelves buttress inland

18 Kate Ravilious, ‘Climate Change likely Cause of Freak Avalanches’, *Guardian*, 4 December 2016.

19 Hannah McNeish, ‘“We Have almost Been Buried”: The Sudanese Villages Being Swallowed by Sand’, *Guardian*, 17 November 2016; Hannah McNeish, ‘Farmers in Sudan Battle Climate Change and Hunger as Desert Creeps Closer’, *Guardian*, 19 December 2016.

20 Karen McVeigh, ‘On the Climate Change Frontline: The Disappearing Fishing Villages of Bangladesh’, *Guardian*, 20 January 2017.

21 Bing Liu, Senthil Asseng, Christoph Müller et al., ‘Similar Estimates of Temperature Impacts on Global Wheat Yield by Three Independent Methods’, *Nature Climate Change* 6 (2016): 1130–7.

glaciers and prevent them from sliding into the sea, but when enough water melts on their surfaces to form ponds, it might slip into cavities and work its way through the shelves until they catastrophically break up; this has happened several times in the Antarctic peninsula, but researchers on the ground have now also observed similar processes underway in the eastern part of the continent.<sup>22</sup> The Totten Ice Shelf holds back a volume of ice equivalent to a 3.5-metre sea level rise. Meltwater and the warm ocean are eating into it from below.<sup>23</sup>

And on it goes. Some on the left maintain that progressives should not stoke panic – they ought to be less ‘catastrophist’ and ‘apocalyptic’ – but if we accept the principles of climate realism and stay up to date with the science, the boot is entirely on the other foot. Donna Orange points to the classic psychoanalytical embarrassment of Sigmund Freud himself, who refused to see Nazi annexation coming and only escaped Vienna at the very last moment, leaving several family members to perish. ‘The parallel with our climate emergency is clear: when we cannot panic appropriately, we cannot take fittingly radical action.’<sup>24</sup> Dare to feel the panic. Then choose between the two main options: commit to the most militant and unwavering opposition to this system, or sit watching as it all goes down the drain.

#### A BAD TIME TO CALL IT A DAY

So what, then, can still be achieved in the struggle to maximise the prospects for survival? If both the 1.5°C and 2°C guardrails turn out to have been breached, we are still far from the 8°C rise in average temperature due to burning all of the proven fossil fuel reserves. That gap covers the distance between a very dangerous arid and an unlivable

22 J. T. M. Lenaerts, S. Lhermitte, R. Drews et al., ‘Meltwater Produced by Wind-Albedo Interaction Stored in an East Antarctic Ice Shelf’, *Nature Climate Change* 7 (2017): 58–62.

23 Stephen Rich Rintoul, Alessandro Silvano, Beatriz Pena-Molino et al., ‘Ocean Heat Drives Rapid Basal Melt of the Totten Ice Shelf’, *Science Advances*, 16 December 2016.

24 Orange, *Climate*, 16.

climate. There would be no scientific support today for the position that it no longer matters whether the fossil fuels in the ground are taken up or not, or for the view that zero emissions tomorrow would make no difference. Those are the two finishing lines the resistance will have to rush towards in the decades ahead: no extraction, no emissions.<sup>25</sup> But it might take *many* decades to get there, and if it does, chances are that a total decarbonisation of the world-economy must be combined with negative emissions on a massive scale for the worst to be averted. Indeed, we have obviously already passed the point where such methods are required for a stabilisation of the climate – taking us back to, say, 350 ppm – and so they demand the closest consideration, if only ever *in addition to* the complete dismantling of the fossil economy. It is far beyond the scope of the present work to discuss on what scale negative emissions technologies could be feasible (empirical data might tell us it is small), but they belong to the parameters of the struggle ahead: trying and using all means to make this little planet habitable for the duration. That will not be achieved at a dinner party. Would very bad scenarios come to pass, there might even have to be a detour of fighting for a planned phase-out of solar radiation management. Perhaps a stabilisation of the climate – after which the autonomous forces of nature can rule once more without jeopardising human civilisation – should be conceived as a revolutionary project for the next few centuries or so. In the meantime, there will be plenty of struggles to wage for meaningful adaptation and just compensation; if only in the medium term, the warming condition will deepen and multiply the social fractures.<sup>26</sup> It is a bad time to call it a day for radical politics.

25 The most compelling manual for how to eliminate fossil fuel use from the world-economy in the shortest possible time is Laurence L. Delina, *Strategies for Rapid Climate Mitigation: Wartime Mobilisation as a Model for Action?* (London: Routledge, 2016).

26 For some further thoughts on this, see Andreas Malm, ‘Revolution in a Warming World: Lessons from the Russian to the Syrian Revolution’, in Leo Panitch and Greg Albo (eds): *Socialist Register 2017: Rethinking Revolution* (London: Merlin Press, 2016), 120–42.



## EVACUATE THE OUTPOST

The fact that the autonomy of nature is ineradicable – like that of labour, including that of a person held a slave – is no reason to persist in seeking to outflank and overpower it. No one can snuff out or even reduce the ontological autonomy of nature. But it is clearly possible to try to dominate it in a way that provokes blow-backs unhealthy for humanity (not to speak of other species), and a purely anthropocentric survival instinct should then be enough to ground a policy of non-subsumption. That cannot mean a policy of non-engagement – humans *must* combine with nature – but in the critical sphere of energy, it does mean ending two centuries of capitalist rule imposed on a separation: renouncing all subsumption by means of fossil fuels. It means living with the autonomous sun and wind and waves without any more solid energy to expand on.

That makes some people jittery. 'It struck me', writes Klein, 'that this need to adapt to nature is what drives some people mad about renewables: even at a very large scale, they require a humility' that bourgeois habits of owning the earth cannot quite stomach. 'The power of the sun, wind, and waves can be harnessed, to be sure, but unlike fossil fuels, those forces can never be fully possessed', and so a turn to them would usher in 'a fundamental shift in power *relations* between humanity and the natural world on which we depend'.<sup>27</sup> Such relations are entirely compatible with the autonomy of nature; one does not respect someone's autonomy by withdrawing from all contact and suspending all claims to collaboration: you can ask your neighbour to cook food for you this evening without making her a slave.<sup>28</sup>

What matters is the ditching of the colonial attitude. 'Marxism of technology', explains the ever-utopian Bloch, 'is no philanthropy for maltreated metals, but rather the end of the naïve application of

the standpoint of the exploiter and animal tamer to nature.' It is an alliance with and inhabitation of the forces of nature as they come forth. 'Technology', writes Bloch – and he could have been referring specifically to energy technology – 'as an ever more advanced but also ever more lonely outpost, lacks contact with the old natural world from which capitalism pushed itself off, and also contact with an element in nature favourable to technology itself.'<sup>29</sup> It is that outpost that must now be evacuated.

## THEODICY

In a rapidly warming world, the room for any modernist theodicy is as rapidly disappearing. Climate science has made it plain what it would mean to let business as usual run its full course. What could possibly justify such an outcome? Nothing, of course, for a worse outcome can hardly be imagined. A bourgeois civilisation that brings it about cannot get away from the guilt, and conversely, the terminus of these firmly laid down tracks shrinks the space for arguments like 'granted, capitalism has created the most abysmal inequalities ever recorded, obliterated subsistence communities and indigenous peoples, thrown billions into unemployment and exhausted billions of bodies more, but at the end of the day, it has spread the living standards of modernity – the envy of all previous history – and lifted humankind out of the ashes of poverty': into the fire. In the twilight of cataclysmic climate change, all previous disasters of the bourgeois epoch become prefigurative. Not coincidentally, Ben Lerner's *10:04* includes a reproduction of *Angelus Novus* and begins with an epigraph from Walter Benjamin: 'Everything will be as it is now, only a little different.'<sup>30</sup>

27 Klein, *This*, 394. Emphasis in original. Cf. 175.

28 As argued by e.g. Hertinger, 'Respecting', 89–93; Throop and Vickers, 'Autonomy', 101–2.

29 Bloch, *Principle*, 695, 692.

30 Lerner, *10:04*, x. See also 19, 54, 109.

## PROGRESS AGAINST PROGRESS

What would real progress mean in the warming condition? Adorno: 'Progress is this resistance to regression at every stage, not acquiescence in their steady ascent.' 'For progress today really does mean simply the prevention and avoidance of total catastrophe.' In one sense, then, we might also say that 'progress occurs when it comes to an end.'<sup>31</sup> Making progress anew, starting to move forwards will, at the same time, in this particular condition we find ourselves in, require various forms of return: back to non-fossil energy sources, lower concentrations of CO<sub>2</sub>, possibly a world without geoengineering. It will be a new dance of one step back and two steps forwards, in opposition to the forces of the storm.

## INDUCE THE IMPLOSION

Benjamin expressed 'the experience of our generation: that capitalism will not die a natural death'.<sup>32</sup> Whether it would survive survival remains an open question. Climate scientists know that renewable energy technologies have to be 'scaled up exponentially' and expect that 'such a "technical explosion" will be matched by an "induced implosion" of the incumbent industrial metabolism nourished by coal, oil and gas.'<sup>33</sup> This includes currently operating sites for the extraction of coal, oil and natural gas, where capital is fixed and circulating in astronomical quantities – fields of accumulation which in themselves, on conservative assumptions, are enough to take the world beyond 2°C.<sup>34</sup> Anyone with some understanding of

31 Theodor Adorno, *History and Freedom: Lectures 1964–1965* (Cambridge: Polity, 2008), 172, 143, 153.

32 Benjamin, *Arcades*, 667.

33 Hans Joachim Schellnhuber, Stefan Rahmstorf and Ricarda Winkelmann, 'Why the Right Climate Target Was Agreed in Paris', *Nature Climate Change* 6 (2016): 651.

34 Oil Change International, *The Sky's Limit: Why the Paris Climate Goals*

the workings of capital – not necessarily the field of expertise of climate scientists – can imagine what such an induced implosion might entail.<sup>35</sup> It would be the destructive character at work, impossible without a political movement endowed with powers not yet on the horizon. But the fact that the climate movement and its allies are still struggling to constitute themselves as a demolition crew is not a reason to give up on them. As for theory, it can only ever play a very limited part in such a project. But at least it should not be a drag on it.

*Require a Managed Decline of Fossil Fuel Production*, priceofoil.org, September 2016.

35 Schellnhuber et al. themselves display a stunning naivety when trying to turn the implosion into a list of policy recommendations: to all intents and purposes, they rely on the market and trust that it will work things out. Schellnhuber et al., 'Why', 652–3.