INTRODUCTION: CLIMATE CHANGE, COMPLEXITY, REPRESENTATION

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Climate change has emerged as the defining environmental issue of our time. It has superseded or subsumed many of the concerns that had animated modern environmental movements since their emergence in the 1960s and 70s – e.g. overpopulation, depletion of natural resources, or loss of biodiversity – and has occasioned almost unprecedented levels of anxiety, apocalyptic fear, guilt, moral outrage, public hand-wringing, rhetorical hyperbole, and political controversy. More than any other issue, it has become an emblem of the ways in which ecological problems muddle the boundaries between science and politics, scramble the distinction between fore- and background, short-circuit the public and the private, and generally play havoc with established categories. More than any other issue, climate change encapsulates the political, cultural, and psychological challenges of living in the Anthropocene – a concept whose rapid embrace by the humanities closely tracks the parallel ascendancy of climate change as a principal matter of concern.

Given its current "supremacy", as Jonathan Franzen warily put it in a controversial *New Yorker* essay ("Carbon Capture"), it is easy to forget that climate change hovered at the outer edges of ecocritical attention until as recently as a decade ago. For the longest time, ecocritics were preoccupied with vindicating first-hand, embodied experience of the natural world against the depredations of a postmodernist orthodoxy which seemed to deny its saliency. Ecocriticism championed the real over the virtual, the concrete over the abstract, the local over the global. Yet the peculiar phenomenology of climate change utterly confounded this critical project. Its effects are spatially and temporally smudged out in such a way that its relationship to the realm of everyday action and experience must necessarily remain oblique. As climate scientists never tire to point out, climate change is a matter of mean distributions and statistical probabilities, such that no particular incident of "strange weather" could ever prove or disprove its reality. In order to understand it, we must employ computer models which compare actual climate data with counterfactual scenarios projecting what the global climate might have looked like in the absence of human intervention – and are then forced to act on the basis of these scientific fictions. In all of these regards, climate change is, as Adeline Johns-Putra has argued, "unlike any *thing* we have encountered before" – and, at the same time, strangely reminiscent of something that "we have been describing in the annals of critical theory all along: an aporia, the Lacanian 'real,' the postmodern unrepresentable, and so on" (7-8).

But while climate change thus compelled ecocriticism to engage with a body of thought that it had hitherto mostly invoked as a foil for its own hard-headed realism, it also did something rather like the inverse, showing how easily the distrust of scientific authority which critical theory had nourished could be appropriated for spurious ends – and hence highlighting the need for a new approach which would avoid the pitfalls of both scientific naturalism and social constructionism, cleaving a path between what Bruno Latour, in an essay from 2004 which soon came to be regarded as the definitive statement of the situation, called the "fact" and the "fairy" position (241). The subsequent rise of actor-network theory, object-oriented ontol-

ogy, and the new materialisms in humanities scholarship must be seen in this light: they seek to offer ways of accounting both for the reality *and* for the constructedness of that proliferating domain of experience of which climate change is but a paradigmatic instance. If climate change is "real," its reality is not of the same kind as that of tables, rocks, or cats on mats. Much to the chagrin of those who are convinced of the over-riding importance of the matter, one cannot pick up climate change and use it to knock a skeptic over the head. As Ulrich Beck wrote with reference to risk more generally, climate change exists in "a permanent state of virtuality": "without techniques of visualization, without symbolic forms, without mass media, etc.," it would be "nothing at all" (332).

Climate change, in other words, cannot be subtracted from the forms in which it is represented. One might say that it is not even a "phenomenon" in the etymological sense of the word, because it does not "show itself": its spatial and temporal dimensions are beyond the ken of our natural senses; the vast, looping tangles of cause and effect it involves push at the limits of rational comprehension; the ethical weight of its potential consequences overtaxes our capacity for empathy and the normative measures by which we ordinarily gauge human behavior. Dealing with climate change therefore means cutting it down to size. It necessarily involves the reduction of overwhelming complexity to manageable levels. Such a reduction can be achieved through the application of mathematical formulae or sophisticated imaging techniques – but, just as consequentially, through narrative and metaphor.

This is the shared premise which links the five essays gathered here. In her contribution to this issue, Eva Horn argues that the "we cannot even address climate change without resorting to metaphors." (p. 4) By translating the abstraction of climate change into a sensible and affective register, the "hyper-metaphor" of heat conveys the urgency of the threat and raises the rhetorical temperature, as it were. Heat affects bodies in ways that every human being is intimately familiar with, but which are nonetheless difficult to articulate. Much like a Heideggerian "mood," heat conditions, and thus to some extent always eludes, cognition (cf. Felski and Fraiman). Horn reconstructs the history of the concept of climate, from Hippocrates through Montesquieu to lesser known 20th century figures such as Willy Hellpach and Ellsworth Huntington, as a series of attempts to grapple with this problem, and goes on to trace the contours of an "aesthetics of heat" in three exemplary works of art: Robert Müller's little-known novel *Tropen* (1915), J. G. Ballard's *The Drowned World* (1962), and Olafur Eliasson's installation *The Weather Project* (2003).

Adeline Johns-Putra's essay addresses a different representational challenge: how to articulate the ethical responsibility of the present for the well-being of future generations. The notion that we have only "borrowed the world from our children" has been a cornerstone of environmentalist rhetoric at least since the 1970s, and it plays a central role in current discourse on climate change. However, Johns-Putra shows, philosophical attempts to specify intergenerational obligations invariably entangle themselves in a host of intractable ethical dilemmas, requiring us, for example, to offset the need for distributive justice in the present with the stipulated needs of future human beings, and to discount our obligations to nonhuman others. By translating the abstract obligation for the future of the biosphere into the familiar vocabulary of parental care, the figure of the child elides these complications and endows the issue with a peremptory emotional charge. And yet, Johns-Putra insists, this is not a metaphor we could simply dispense with. Novels such as Maggie Gee's *Ice People* (1998), Cormac McCarthy's *The Road* (2006), or Barbara Kingsolver's *Flight Behavior* (2012) demonstrate how the "overwhelmingly conservative and conventional trope of posterity-as-parenthood" (p. 13) can be modulated and com-

plicated in ways that open up an affective space where non-kin and nonhuman beings matter.

Solvejg Nitzke takes on another iconic trope of environmentalism: the famous Blue Marble photograph, which has so often been employed to hammer home the message that "there's only one world" (and that "our" mission is to save it). But, as Nitzke argues with Timothy Morton, the very notion of "world" implies a kind of integrity and knowability which the advent of climate change, and of the Anthropocene more generally, have made obsolete. Just as the Blue Marble photograph renders invisible many of the ways in which humans have transformed the planet, so does the "one world" rhetoric associated with the image elide the actual complexity of the society which has brought about these transformations. Coming to terms with the Anthropocene means to understand that the end of the world already lies behind us, and to realize that the planet is in fact a hyperobject which does not allow for the kinds of distancing and perspective-taking that would allow one to conceive of it as a world, in the first place. How, then, is one to approach the Earth as hyperobject? According to Nitzke, Morton's hybrid style of theorizing, which moodily tacks between the personal and the scholarly, explicitly taking on the heavy emotional burden imposed by the subject at hand but also lightheartedly juggling with the vocabularies of philosophy and popular culture, is itself an answer to this question. This gives her license to juxtapose Morton's treatise *Hyperobjects* with Dietmar Dath's experimental novel *The Abolition of Species* (orig. 2008) which, although it is nominally a work of science fiction, similarly jumbles discursive registers and addresses many of the same questions. The ending of this novel, Nitzke argues, dramatizes the point that to turn the Earth into a "world" would in fact mean to turn it into a museum – a self-contained and ultimately sterile space.

That any practical approach to mitigating climate change will require a drastic reduction of anthropogenic CO_2 emissions, and hence a transition away from fossil fuels, is largely uncontroversial. Less clearly understood is the fact that such a transition poses challenges not just for politicians and engineers: the fossil-fuel based infrastructure of what critics such as Stephanie LeMenager and Graeme MacDonald have termed "petromodernity" has produced, and is now ensconced in, a set of habits and attitudes that are much more difficult to replace than the technologies which power the artificial environments we inhabit. The transition to renewable energy sources also necessitates cultural change – and, Axel Goodbody argues, literary fiction can play an important role in this process. In his essay, he examines three contemporary novels which dramatize the psychological, cultural, and ecological costs of a form of life based on the profligate use of energy, and reflect on the question what it would take to wean ourselves away from fossil fuels. Andreas Eschbach's *Ausgebrannt* (2007), Jonathan Franzen's *Freedom* (2010), and Ian McEwan's *Solar* (2010) each draw on the resources of different literary genres (such as the thriller, the *Bildungsroman*, the picaresque, satire, or the neorealist novel of manners), employ distinctive metaphors (e.g. troping fossil fuel use as gluttony or sexual promiscuousness), and mobilize familiar narrative patterns (e.g. by alluding to the Biblical stories of the expulsion from the Garden or the Tower of Babel). In doing so, these novels make the ways in which we are culturally and affectively invested in our energy infrastructure visible, and thus available for public debate.

My own contribution seeks to tackle the subject at a more abstract level, taking issue with the commonplace assumption that we need to tell "better" stories about climate change in order to mobilize the public for political action. In the context of such arguments, "better" is often taken to mean "non-anthropocentric," the underlying assumption being that narrative patterns are somehow inherent in the

material world, rather than discursive artifacts imposed on it by human narrators. Against this view, I argue that attempts to narrativize climate change necessarily misrepresent the logic governing its historical trajectory. As a symbolic form, narrative is ineluctably anthropocentric and constitutively unable to grasp the emergent properties of complex systems. Narrative may be indispensable insofar as it serves to reduce complexity and make it socially manageable. However, for the very same reason we also need to view it with a good deal of skepticism.

Literary scholars do not like to be asked about the practical value of their insights. With a subject such as ours, however, the question can hardly be dodged. So what's the upshot? After President Donald Trump announced the withdrawal of the United States from the Paris Accord on June 1st 2017, one frequently heard the argument that it did not matter: that his announcement was a symbolic gesture to satisfy his base which would not change underlying economic trends; that the agreement itself was merely an exercise in political symbolism, no more than a non-binding declaration of intentions, the reductions to which the signatories had committed themselves insufficient to significantly mitigate global warming. To which one is compelled to answer: yes, the Paris Accord was symbolic – and that is precisely the point. Symbols matter. It is through symbolic representations that we establish shared horizons of expectation within which we become able to act collectively. It is through narrative and metaphor that humans cope with situations in which they lack "definitive evidence" but are nevertheless "compelled to act," as Hans Blumenberg once put it. Climate change is such a "rhetorical situation" (441). Our hope and expectation is that the essays in this special issue will stand as contributions to a debate that has only just begun.

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