

The Value of
ECOCRITICISM

TIMOTHY CLARK



The Value of Ecocriticism

The Value of Ecocriticism offers a brief, incisive overview of the fast-changing field of environmental literary criticism in a bewildering age of global environmental threat. The intellectual, moral and political complexity of environmental issues, especially at the global scale (the so-called Anthropocene), forms a new challenge of inventiveness for both literature and criticism. Ecocriticism has been going through a period of radical change and has become a diverse and huge field on the exciting but unstable boundary between the humanities and the sciences, with a mix of cultural, political, scientific, and activist strands. Its mantra is that the environmental crisis demands a reconsideration of society's basic values, constitution and purposes, and that art and literature can be vital in that work. As a leading figure in this field, Timothy Clark surveys recent developments in ecocriticism lucidly, but also sometimes critically. This book examines ecopoetics, material ecocriticism, and the ideas of world literature as well as contentious claims that we are living in a new geological epoch.

Timothy Clark is a specialist in the environmental humanities and deconstruction. Clark has been a leading figure in the development of new modes of literary criticism engaged with the intellectual revolution inseparable from thinking of global environmental degradation. His previous books include *Ecocriticism on the Edge: The Anthropocene as a Threshold Concept* (2015); *The Cambridge Introduction to Literature and the Environment* (2011); and *Derrida, Heidegger, Blanchot: Sources of Derrida's Notion and Practice of Literature* (1992).

The Value of Ecocriticism

Timothy Clark
University of Durham



CAMBRIDGE
UNIVERSITY PRESS

CAMBRIDGE UNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom

One Liberty Plaza, 20th Floor, New York, NY 10006, USA

477 Williamstown Road, Port Melbourne, VIC 3207, Australia

314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre,
New Delhi – 110025, India

79 Anson Road, #06-04/06, Singapore 079906

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning, and research at the highest international levels of excellence.

www.cambridge.org

Information on this title: www.cambridge.org/9781107095298

DOI: 10.1017/9781316155073

© Cambridge University Press 2019

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published 2019

Printed in the United Kingdom by TJ International Ltd. Padstow Cornwall

A catalogue record for this publication is available from the British Library.

Library of Congress Cataloging-in-Publication Data

Names: Clark, Timothy, 1958– author.

Title: The value of ecocriticism / Timothy Clark, University of Durham.

Description: Cambridge ; New York, NY : Cambridge University Press, 2019.

Identifiers: LCCN 2018039106 | ISBN 9781107095298 (hardback) |

ISBN 9781107479241 (pbk.)

Subjects: LCSH: Ecocriticism. | Environmentalism in literature.

Classification: LCC PN98.E36.C538 2018 | DDC 809/.933553–dc23

LC record available at <https://lcn.loc.gov/2018039106>

ISBN 978-1-107-09529-8 Hardback

ISBN 978-1-107-47924-1 Paperback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

Contents

<i>List of Illustrations</i>	<i>page viii</i>
<i>Acknowledgements</i>	<i>ix</i>
Introduction	I
1 The ‘Anthropocene’? Nature and Complexity	17
2 Scalar Literacy	38
3 Ecopoetry	57
4 The Challenge for Prose Narrative	78
5 Material Ecocriticism	111
6 ‘Postcolonial Ecocriticism’ ... and Beyond?	137
<i>Notes</i>	<i>160</i>
<i>Index</i>	<i>181</i>

Illustrations

1	<i>Palm oil plantation</i>	<i>page 9</i>
2	<i>Hutton's famous angular unconformity at Siccar Point, Berwickshire, Scotland</i>	45
3	<i>Complexity</i>	52
4	<i>Chimp 'smiling'?</i>	82
5	<i>Three Gorges Dam, China</i>	148

Acknowledgements

Work on this book was kick-started by a term's fellowship at the Institute of Advanced Study, University of Durham. My thanks to colleagues there but, above all, to Dr Jennifer Ford for detailed feedback on the draft.

Introduction

GREEN PROTEST CRITICISM

The Monkey Wrench Gang (1975)¹ is a classic protest novel by Edward Abbey. It depicts the coming together of a group of very different people in the western United States, each outraged in their own way by the loss of formerly wild areas to new roads and industry. The novel celebrates the practice of eco-sabotage, such as the disabling or 'monkey wrenching' of large construction equipment. A major thread concerns a plot to destroy the Glen Canyon Dam on the Colorado River in northern Arizona. Completed in 1966, this vast structure had flooded the famous and beautiful Glen Canyon behind it, forming a reservoir supplying water to large areas of the southwestern United States (the new 'Lake Powell'). For many people, the new dam symbolised attitudes of destructive human domination over the natural world. Controversy over it fed into the emerging environmental movement at this time: 1962 had also seen the publication of Rachel Carson's decisive attack on pesticides, *Silent Spring*.²

Abbey's work, including his polemical essays, was part of this cultural shift. It was to be a decisive influence on the direct-action group Earth First!, some of whose members put into practice the kinds of non-violent but illegal acts of sabotage that Abbey had enjoyed imagining. In 1985 a field guide was even produced, *Ecodefense: A Field Guide to Monkeywrenching*.³

In March 1981 Abbey participated with Earth First! in a protest demonstration near the site of the infamous dam. Abbey said:

We are gathered here today to celebrate three important occasions: the rising of the full moon, the arrival of the Spring Equinox, and the imminent removal of Glen Canyon Dam.

2 Introduction

I do not say that the third of these events will necessarily take place today – although I should warn you that some of my born-again Christian brothers and sisters have been praying, night and day, for one little *pree-cision* earthquake in this here immediate vicinity, and I do predict that one of these times their prayers will be answered – in fact, even now, I think I perceive an ominous-looking black fracture down the face of yonder cee-ment plug – and this earth will shake, and that dam will fall, crumble, and go.⁴

Abbey directs his audience to ‘an ominous-looking black fracture’ in the dam. It looked as if the face of the structure was indeed about to collapse. In fact, fellow protesters had released a 91-metre long tapering black line of fabric down from the top of the dam, producing from a distance the appearance of a disastrous crack.

Our topic here is literature and its criticism: there is a direct analogy to be drawn between this protest stunt and Abbey’s 1975 novel. The novel depicts and identifies with a group of people planning to destroy the dam. However, Abbey was not, to my knowledge, directly involved in illegal conspiracies of physical sabotage. The status of his fiction itself is more akin to that of the protest demonstration than to any act of illegal destruction. Both the novel and the protest stunt are interventions in the realm of cultural representations and public debate, not real actions upon concrete and river water.

Both the protest stunt and the novel see themselves nevertheless as a kind of environmental activism. That is, being both of them entirely symbolic, they embody the faith that the public stage is one of power and possible influence, whether that public is the audience of a speech or the readers of a novel. Both embody the conviction that acts of cultural representation can wield significant power.

It was the US and Western Europe that saw the rise to visibility of the environmental movement as a cultural phenomenon, and, later, from c. 1990 the advocacy of green values in the study of literature (‘ecocriticism’). One enabling condition for this is the fact that these societies, as home to relatively tolerant forms of consumer capitalism, were democracies in which public opinion seemed

capable of being a significant political force. In this way, forms of cultural symbolism and advocacy could also be lived as kinds of political activism – in effect, not blowing up an actual dam but glorying in an image of its destruction as an incitement to environmental debate.

Future historians will analyse the striking parallelism between social progressive movements and environmental movements. Environmental movements in the West emerged in the 1960s almost always in tandem with the peace movement in various forms, in the context of Cold War fears about nuclear annihilation. J. R. McNeill and Peter Engelke write: 'West Germany's Green Party became the exemplary case of the marriage between the peace and environmental movements, with the party's early history marked as much by its steadfast pacifism as its environmentalism.'⁵

Greg Garrard defines ecocriticism in terms that stress its deep ties to the liberatory politics of the progressive left:

ecocriticism is an avowedly political mode of analysis, as the comparison with feminism and Marxism suggests. Ecocritics generally tie their cultural analyses explicitly to a 'green' moral and political agenda. In this respect, ecocriticism is closely related to environmentally oriented developments in philosophy and political theory. Developing the insights of earlier critical movements, ecofeminists, social ecologists and environmental justice advocates seek a synthesis of environmental and social concerns.⁶

Ecocriticism has plural strands, but this progressive commitment is almost universally shared. For most ecocritics, human abuse of the natural world is best understood as the corollary of unjust or oppressive systems of government and economics, and forms of social organisation (hierarchy, plutocracy, patriarchy) that both abuse other human beings and which have no hesitation taking a similar stance towards anything else. '[O]ur exploitation of our environment has emerged from the same mind-set as our exploitation of each other' (Terry Gifford).⁷ Traditions of feminism have been especially important here, tracing environmentally destructive behaviours to patriarchal norms

4 Introduction

of entitlement and ownership, and to fantasies of mastery both over nature and each other, in denial of human bodily finitude.

For Edward Abbey in 1981 in front of the submerged Glen Canyon, an immediate enemy seemed crudely obvious: rampant capitalist greed and corrupt politicians:

The politicians of Arizona, Utah, New Mexico, and Colorado, in cahoots with the land developers, city developers, industrial developers of the Southwest, stole this treasure from us in order to pursue and promote their crackpot ideology of Growth, Profit, and Power – growth for the sake of power, power for the sake of growth.⁸

Despite this vision of government dominated by the interests of capitalists ready to destroy even the famous Glen Canyon for short-term profit, Abbey's stance as a protestor was still necessarily a hopeful one. Like Abbey, the majority of ecocritics see their intellectual work as a kind of worthwhile activism, committed to the argument that a change in cultural values can lead to less destructive forms of life. To change the values by which people think is held to impact upon the very levers of power whereby laws might be changed and new modes of life and economics introduced. Such green advocacy makes most sense within a political and social context in which public debate and representations, including literature and its criticism, are felt to have significant power, as with the broad impact of Carson's *Silent Spring* in the 1960s. So ecocritics' commitment to progressive politics is also a commitment to supporting or enhancing those social and political conditions that give green arguments some chance of being heard. For organisations such as Earth First!, however, with its commitment to direct action, faith in current political institutions seems inadequate, or just wishful thinking. In fact, across the world environmental activists and workers are now being murdered in record numbers.⁹

What kinds of symbolic protest action are most likely to have some impact in environmental politics? Molly Wallace takes up this question at length, and affirms Ulrich Beck's reference to creating or affirming 'symbols that disclose the structural character of the

problems while at the same time fostering the ability to act'.¹⁰ Beck's account offers Wallace a useful way to analyse and evaluate various protest slogans in the environmental movement. Take one that was applied to the Bikini atoll atomic testing in 1946 in the Pacific: 'Bikini is our World'; or in response to the infamous explosion at a chemical plant in Bhopal, India in 1984, the forthright 'We All Live in Bhopal'. Both these slogans have force by stressing that, ultimately, issues such as exposure to radioactivity or to the destructive effects of pesticides cannot be confined to just the one place, but are truly global in impact or implication. On the other hand, both slogans also mislead: they direct attention away from the fact that exposure to environmental risk is not evenly distributed across the world, but tends to victimise people who are already impoverished or side-lined. In that sense we are emphatically *not* all in Bhopal, and Bikini is not *our* world.

Wallace's observations on these simple slogans are already an example in miniature of the work of ecocriticism. Ecocriticism asks fundamental questions about the nature and causes of environmental crises, the ways they are represented in language and culture, or contested or interpreted in literature, in art or daily discourse. A significant proportion of ecocritics are working primarily as cultural critics in this way, highlighting the cultural assumptions and world-view implicit in specific ways of describing an issue. Consider for example the widely heard phrase, 'great wildlife spectacle'. This can be said to merge an enthusiastic appreciation of some place or creature, but with the potentially damaging overtone that the natural world is valuable primarily as a kind of thrilling show or entertainment.

Wallace also refers to the kinds of theatrical protest for which Greenpeace is known. Beck celebrates Greenpeace as:

multinational media professionals who know how self-contradictions between pronouncements and violations of safety and surveillance norms can be presented so that the great and powerful (corporations, governments), blinded by power, stumble into the trap and thrash around telegenetically for the entertainment of the global public.¹¹

6 Introduction

Greenpeace performs stunts that highlight the contradictions, hypocrisies and violence of an issue or of government or corporate policy. Beck's analysis could be applied in turn to the numerous kinds of performative art or installation celebrated by green critics in recent years. Take two such recent celebrated examples used by Stacy Alaimo. One, held by Greenpeace in 2007 to protest global warming, is a photo of a large crowd of people standing exposed in front of vast glacier, all naked.¹² Alaimo sees this as a striking piece of activism, reminding us all of shared human vulnerability and exposure. Another instance is the spoof TV advert, 'Plastic Seduction' by Katrin Peters, protesting the disastrous infestation of the oceans by plastic.¹³ This depicts a man on a beach romantically feeding his girlfriend an oyster, except that a plastic bottle top is perched on top of the food her mouth leans gratefully towards, as if it were a condiment. The force of this image chimes at once with Beck's affirmation of 'tangible, simplifying symbols, in which cultural nerve fibres are touched and alarmed, [and] take on central political importance'.¹⁴

Although it was not part of his remit, Beck's argument in *World at Risk* already offers a striking, provisional account of the kinds of reading that ecocriticism often gives of literary texts. As Wallace argues, Beck's celebration of a Greenpeace protest could also, for example, describe a scene in Indra Sinha's novel *Animal's People* (2007).¹⁵ In this text the fictional 'Khaufpur' is partly based on the historical Bhopal, with the novel's central protagonist ('Animal') so crippled by the accident at the chemical plant that he walks on all fours. In a concluding, late passage a mysterious woman clad in a burqa sabotages a clandestine meeting of the chemical company's lawyers and corruptible local politicians by emptying a pungent stink bomb into the air conditioning system of the expensive hotel they are using:

These Kampani [company] heroes, these politicians, they were shitting themselves, they thought they were dying, they thought they'd been attacked with the same gas that leaked on that night, and every man there knew exactly how horrible were the deaths of those who breathed the Kampani's poisons. (360)

Wallace points out the similarity of this protest to Beck's description of the work of an organisation like Greenpeace. In *Animal's People*, 'What made the whole thing fully grand was that someone had tipped off the press, they were waiting with their cameras when these goons stumbled out into the lobby.'¹⁶

Not just this action *in* the novel, but *Animal's People* itself is a complex act of cultural/symbolic protest, deploying fictional scenes and tropes to trace the long-term social effects of environmental trauma. The international success of Sinha's novel formed an all too rare instance of the value of literary invention in a political context where more traditional means of resistance and campaigning had had only limited success in highlighting the injustices of Bhopal. More generally, the work of many an environmentally inflected text or ecocritical reading is to form a mode of symbolic action or of analytical interpretation, in order to highlight the contradictions, absurdities or injustices at work in the situations that concern it.

AN EXAMPLE OF ECOCRITICAL READING: JOHN CLARE

Another forceful example for environmental criticism is provided by one of the most powerful poems by the English poet and agricultural labourer John Clare, 'The Lament of Swordy Well', probably composed in the early 1820s. This is now one of the most famous of Clare's so-called 'enclosure elegies', existing in disputed versions, unpublished in his lifetime, probably because of its political outspokenness (this was not the 1960s).¹⁷ Clare's text exemplifies the kind of linguistic and conceptual inventiveness often required to give voice to environmental outrage. The literary protest technique deployed is that Clare makes the land itself the speaker of the poem. It cries out in person about being plundered and stripped following local acts of *enclosure*, the government-sanctioned appropriation by the wealthy of once communal land. The traumatised voice of Swordy Well becomes also a 'tangible, simplifying symbol, in which cultural nerve fibres are touched and alarmed, [... and] take on central political importance'.

8 Introduction

'The Lament of Swordy Well' exemplifies one of the key commitments of ecocriticism, to highlight and analyse the often-inseparable relation between human and political injustice and environmental destruction. Clare bestows Swordy Well mainly with the language and perspective of a labourer who would formerly have lived with and from the land, but who is now fallen in want upon the parish. Ironically, the only 'room' left for this piece of land is the symbolic space of poetic song, 'the room to speak':

Though I'm no man yet any wrong
Some sort of right may seek
And I am glad if e'en a song
Gives me the room to speak
I've got among such grubbling geer
And such a hungry pack
If I brought harvests twice a year
They'd bring me nothing back

The view of the enclosures associated with Clare and supported by many historians is that of the destruction of a communal system of agriculture and land use, one based on mutual obligation and shared responsibility as well as on forms of reciprocity often outside the money-based economy. Such communality was replaced by a form of exclusive individual property title, the land becoming a part of the market economy. With enclosures such as that of Clare's village of Helpstone, enforced through specific acts of parliament, forms of common law rights based on immemorial custom were supplanted by statute law, consolidating further Britain's dominant landowning oligarchy. People who may previously have lived with some degree of independence from the market economy were forced to become part of it or be pauperised.

Clare's text concerns a situation of land appropriation through legal manoeuvring, of the kind now most visibly associated with postcolonial and neo-colonial contexts. Clare's text is analogous to Ogaga Ifowodo's poetic sequence, *The Oil Lamp* (2005), protesting

the devastation of the Niger River delta by oil companies, or the impact of the same industries on the Middle East as traced in the work of Abd al-Rahmaan Munif.¹⁸ The enclosure of Swordy Well for individual private profit in 1809 is a scenario since repeated innumerable times in acts of deforestation to make way for cattle (incidentally, a source of greenhouse gases larger than that of all the world's transport systems), or the appropriation and destruction of vast areas of rainforest for palm oil plantations or other monocultures for export.

Clare's innovative text highlights another challenge engaged by environmental literature and criticism: how to give voice to the non-human, to birds or insects or even to a piece of land in this case, in ways that do not seem merely fanciful or weakly anthropomorphic. The ecologist Aldo Leopold's bizarre, striking touchstone phrase from the 1940s, 'Thinking like a mountain',¹⁹ highlighted the challenge of speaking for an ecosystem that may operate on scales of time and space that often elude normal human perception or judgment.



IMAGE 1 *Palm oil plantation. 'Aerial [sic] view of palm plantation at east asia', nelzajamal/Shutterstock.com.*

Clare's text demonstrates a rhetorical, conceptual and narrative inventiveness sensitive to the claims of non-human entities. In Clare's case, the provocative personification compares suggestively with Berthold Brecht's satirical language in 'Questions from a Worker who Reads':

Who built Thebes of the seven gates?
 In the book you will find the names of kings.
 Did the kings haul up the lumps of rock?
 Any Babylon, many times demolished
 Who raised it up so many times?
 ... Great Rome
 Is full of triumphal arches. Who erected them?²⁰

Brecht's poem corrects the unjust bias in historical records of human acts, the way they 'naturalise' structures of social power. Clare goes even further and anticipates here, by almost 200 years, a major element of art and ecocriticism in the early twenty-first century, the so-called turn to things, the renewed attention to the ways things, tools, infrastructure, natural conditions such as climate – non-human agency – are a major and decisive element in human affairs, above or beside the realm of people's decisions and intentions. Thus, Clare is not just, like Brecht, pointing out the place of unregarded people in historical events: he is concerned with the basic material/natural conditions of life and survival through, as we would now say, a healthy ecosystem. As Swordy Well is stripped of its fertility, the land 'speaks':

But ere I fell to town affairs
 I were as proud as they
 I kept my horses, cows, and sheep
 And built the town below
 Ere they had dog or cat to keep
 And then to use me so

This stanza implicitly asks the question: who, in the end, 'keeps' or sustains horses, cows and sheep – the humans that own them, or the grass they eat and the rain and soil that nourish it?

The case of John Clare exemplifies how ecocriticism is altering the literary canon. Clare's status has risen substantially in the last twenty years, precisely because his work offers a less human-centric view of life, giving moral standing and value to individual birds and creatures of the field, openly persecuted. At the same time, the reputation of Clare's contemporary William Wordsworth as a 'nature poet' has become contestable, with the realisation of how deeply a problematically human- and even male-centred stance structures a poem like the famous 'I wandered lonely as a cloud.' For this is concerned with natural phenomena (daffodils in this case) overwhelmingly as a psychic resource, to be celebrated in almost consumerist terms for their contribution to personal growth and pleasure ('I gazed and gazed, but little thought / What *wealth* the show *to me* had brought' (emphasis added)) – a 'great wildlife spectacle', in effect.²¹

AN 'ANTHROPOCENE'?

But is it too late for environmental criticism in any case? It is now widely acknowledged that human actions have, inadvertently, already triggered a profound and irreversible change in the operations of the Earth system. Old words such as spring, wilderness, wildlife, nature, the ocean – none of these now have the same literal referent as a hundred years ago, and their cultural resonance must be conceded as having been drastically changed. The seas and oceans, for example, can clearly no longer stand for images of a vast, inhuman, pristine and unchangeable force, a frontier to knowledge and understanding. Instead they are menacingly damaged entities touched by human waste and dying creatures, vast dumping sites as well as residual symbols of the elemental.

This newly recognised context, often loosely termed 'the Anthropocene' (see Chapter 1), has enforced a cultural and intellectual

shift whose extent can only be fully realised over an indefinite future. For literature and criticism, it also means no longer being able to endorse older forms of environmental nonfiction ('nature writing') in which notions of nature or the wilderness were at the centre of unproblematic values of 'authenticity', of self-discovery or of redemption from urban values, while 'categories such as the picturesque or even the beautiful congeal into kitsch'.²²

Perhaps the shifts in sense and understanding summed up in the term 'Anthropocene' are so profound as to be inexpressible within our inherited vocabulary. Robert Macfarlane calls for new words for the new emotions and perceptions of this contaminated context. He writes: 'Last year [2015] I started the construction of a crowdsourced Anthropocene glossary called the "Desecration Phrasebook", and in 2014 *The Bureau of Linguistical Reality* was founded "for the purpose of collecting, translating and creating a new vocabulary for the Anthropocene".' He asks: 'Is there a word yet for the post-natural rain that falls when a cloud is rocket-seeded with silver iodide? Or an island newly revealed by the melting of sea ice in the North-West Passage? Or the glistening tidemarks left on coastlines by oil spills?'²³

Other instances relate to changed human emotions for which no word currently exists, such as Glenn Albrecht's 'solastalgia', meaning 'a form of psychic or existential distress caused by environmental change', such as when a home finds itself suddenly near a new industrial site, motorway or mining operation, or is recurrently afflicted by drought ('we might think of John Clare as a solastalgic poet'). Other words are 'apex-guilt' and 'shadowtime', the latter meaning 'the sense of living in two or more orders of temporal scale simultaneously' – say, a beautiful, warm winter's day (short term): a day of frightening global warming (long term).

We exist in an ongoing biodiversity crisis – but register that crisis, if at all, as an ambient hum of guilt, easily faded out. Like other unwholesome aspects of the Anthropocene, we mostly respond to mass extinction with stupor: the aesthetic experience in which astonishment is united with boredom.²⁴

We also respond with 'stuplidity' to an event comparable in import to what is being said of the 'Anthropocene'. This is the growing acknowledgement that we must accept a multiple breakdown of inherited notions of the human/animal distinction. The past decade has seen work in animal studies explode into a diverse and distinct field of inquiry, too large to be fully covered in a book of this small size. Matthew Calarco sums up:

There are numerous scientific and anecdotal accounts of such breakdowns: primates passing along novel behaviours through cultural means; elephants grieving and mourning for dead companions; cross species altruism among various animal species; birds creating elaborate ruses to deceive other animals; squirrels with precise long-term memories; certain primate and bird species demonstrating self-awareness; tool use [...]²⁵

The general term, '*the animal*', has become merely ridiculous, as one supposed to cover such a diversity of modes of life and sentience.

Inherited arguments, whether it be Aristotle on animals' lack of rationality or Descartes' preposterous claim of their lack of consciousness, come to seem no more than assertions made to justify a status quo in which animals are exploited solely as a resource for human beings. The issue takes an even more uncomfortable moral form in the context of a world that many see as entering the throes of a mass extinction event.

The erosion of the 'human/animal' boundary informs one of the most significant intellectual movements in the present-day humanities, namely 'posthumanism'. The term names modes of thinking which do not necessarily see humanity as the sole source or object of value in the world, and which are suspicious of idealisations of human 'individualism' and 'autonomy', stressing instead not only the fact that human beings are animals among other animals, dependent upon them for food and an integrity of environment (oxygen in the

atmosphere, certain manageable CO₂ levels), but are also imbricated 'in technical, medical, informatic, and economic networks' that make them what they are.²⁶

Environmental issues are always inherently 'posthuman' in that they stress the degree to which human life and thought are determined by multiple material conditions and relationships. They challenge the way modern human society is often dominated by the values of a supposed human exceptionalism, 'repressing not just its animal origins in nature, the biological, and the evolutionary', but with deluded fantasies of 'transcending the bonds of materiality and embodiment altogether' (Cary Wolfe).²⁷

THE SPREAD AND SCOPE OF ECOCRITICISM

Ecocriticism becomes less the affirmation of an established body of literary work, even of such recognised environmental classics as Henry David Thoreau's *Walden* (1854) or Carson's *Silent Spring* (1962), but more the continuous articulation and theorisation of a crisis of value still transforming the sense of all inherited literature and culture in often uncertain ways. At issue is the gradual and uncomfortable realisation of just how deeply inherited modes of thinking and reading are contaminated by a destructive anthropocentrism, that is, the assumption that it is only in relation to human beings that anything else acquires value. The revisionist force of ecocriticism in literary studies is apparent in the numerous rereadings now appearing of canonical texts. Just as in a previous generation a frequent formula for the revaluation of old texts was 'x and women', now 'x and the environment' becomes a source of new PhD projects or book titles, with texts appearing on such diverse topics as green rereadings of the Theatre of the Absurd,²⁸ of late medieval English Literature,²⁹ and with individual author studies like *J.G. Ballard and the Natural World*,³⁰ or environmentalist overviews of a literary period,³¹ and so on.³² Ecocritical stances are becoming a standard part of all literary criticism. There has also been a remarkable internationalisation of the field over the past decade, with ecocritical studies appearing from every continent.

Ecocriticism has become a diverse and vast field, a mix of literary, cultural, political, scientific and activist strands (the 'environment' is, after all, everything, strictly speaking). Its mantra is that the environmental crisis demands a reconsideration of society's basic values, constitution and purposes, and that art and literature can be vital in that work. The stress on cultural values as pivotal also highlights the degree to which day-to-day life and its cultural politics are implicated in environmental questions. This puts a humanities subject at the very heart of environmental debate, and not just the discourses of science. At the same time, however, its intense focus on the cultural feeds into an arguable weakness in much ecocriticism, that of projecting the view that environmental destruction rests entirely on false values or intellectual mistakes. As a Marxist critic objects, the 'ecological question is reduced first and foremost to one of *values*, while the much more difficult issue of understanding the *evolving material interrelations* (what Marx called 'metabolic relations') between human beings and nature is thereby missed altogether'.³³

No book of this size could encompass the plurality of environmental politics in the world's multiple cultures, languages and traditions of art and literature. Accordingly, this book limits itself to material available in English to focus on the most telling intellectual and conceptual frontiers of ecocriticism as a critical mode, opening with a chapter on the controversial notion of the Anthropocene. Most attention is devoted to the rapidly changing ecocritical work from about 2010 onwards, with its increasing recognition of the often-daunting complexity of environmental questions. Three issues stand out over this dramatic decade: (1) the need to focus on environmental issues at larger, often truly global scales, and the challenge to inventiveness which questions of scale and complexity represent for inherited aesthetic forms, the topic of Chapters 2 to 4, which consider this issue in relation to poetry and the novel in particular; (2) the challenge of representing the causal agency of non-human factors in environmental debate, the so-called turn to things, a particular concern of so-called material ecocriticism discussed in Chapter 5; and (3) in Chapter 6 the recent but speedy internationalisation of

ecocriticism. New studies are now emerging from every continent, and these both continue and revise the work of a postcolonial ecocriticism still seeking to transcend the acknowledged limitations of ecocriticism's origins in relatively comfortable and ever latently hypocritical American and European academic contexts.

I The 'Anthropocene'? Nature and Complexity

On 29 August 2016 appeared a long-anticipated headline, 'The Anthropocene epoch: Scientists declare dawn of human-influenced age'. At issue was the August report of the so-called Anthropocene Working Group, part of the Subdivision on Quaternary Stratigraphy, itself part of the International Union of Geological Sciences. In the newspaper's summary: 'Humanity's impact on the Earth is now so profound that a new geological epoch, "the Anthropocene", needs to be declared, according to an official expert group who presented the recommendation to the International Geological Congress in Cape Town on Monday.'¹

An epoch is a period of deep time on the geological timescale distinct enough to have a designation of its own. Correspondingly, the 12,000 years epoch of the Holocene during which all human civilisation developed, with its relatively stable climate, would have to be acknowledged as ended. For geologists to designate a new epoch entails choosing and describing some 'golden spike' (or, strictly, 'Global Boundary Stratotype Section and Point'), an unambiguously identifiable boundary marker in the rock strata. For the Anthropocene, this entails debate about which markers will survive to be detectable in strata in the far future, a weirdly science fiction scenario incorporating into present debate the views of hypothetical far-future geologists. The article continued:

The new epoch should officially be seen to begin about 1950, the experts recommend, and it was likely to be defined [in future rock strata] by the radioactive elements dispersed across the planet by nuclear bomb tests, although an array of other signals, including

plastic pollution, soot from power stations, concrete, and even the bones left by the global proliferation of the domestic chicken, were now under consideration.

Earlier claims have been for 'the invention of the steam engine' in 1784 as a birth date (meaning James Watt's patented improvement of the piston steam engine of Thomas Newcomen from 1712), or even the invention of agriculture.²

But some people are already sceptical and bored with the Anthropocene. 'Welcome to the Anthropocene' has already featured too often as a glib headline in various magazines and museum exhibits. It is already a cliché, the 'Bandwaggonocene', as I've heard it called. This sense of slight boredom also, however, exemplifies how the scale of awareness and engagement in human society cannot easily adapt to that of planetary geology. The geological term seems simultaneously overly technical, and far too big to conceive.

The significant issue would not be that humanity has become a species with global geological impact – it can't be the first such (consider, for instance, the ancient cyanobacteria that altered the oxygen content of the atmosphere, making oxygen-based complex life possible) – but that it is the first *knowingly* to be so. The question is what to do with such knowledge, and how it changes readings of contemporary human life and history.

The proposed Anthropocene is an unavoidably hybrid concept, involving the geological, historical and political. The thirty-five members of Anthropocene Working Group include an environmental historian (John McNeill) and a historian of science (Naomi Oreskes).³ Oreskes is also the co-author with Erik Conway of the book *The Collapse of Western Civilization* (2014).⁴

The geologists advocating an 'Anthropocene' are themselves well aware of cultural and political implications in the term not usual to their discipline. A joint article by four of them reads:

The concept of the Anthropocene might ... become exploited, to a variety of ends. Some of these may be beneficial, some less so.

The Anthropocene might be used as encouragement to slow carbon emissions and biodiversity loss, for instance; perhaps as evidence in legislation on conservation measures; or, in the assessment of compensation claims for environmental damage. It has the capacity to become the most politicized unit, by far, of the Geological Time Scales and therefore to take formal geological classification into uncharted waters.⁵

How could recognising some new epoch matter? In a podcast John McNeill (the environmental historian on the Anthropocene Working Group) says that its vast timescale is valuable as highlighting concrete realities and changes immediately at hand.⁶ The new term helps us conceive the striking novelty of the world of the so-called great acceleration, post-1950, in energy and resource use, and waste.

Geologists themselves acknowledge that the concept of the Anthropocene 'takes formal geological classification into uncharted waters'.⁷ Hence it is that ecocritics have already been adapting the notion of an Anthropocene in various speculative and interesting ways, less restricted by scientific method. Oddly, however, it is a book by a literary critic that stands out for anticipating official acceptance of an 'Anthropocene' in a strictly geological sense, in order to stress the revisionist force of the new term for work in the humanities. All the same, literary study barely figures in Jeremy Davies's *The Birth of the Anthropocene* (2016).⁸

Davies's is an argument on the force of keeping the Anthropocene as a strictly geological concept, against looser appropriations of the term now current. The understanding of geology at issue here is 'neocatastrophist': that is, whereas a former orthodoxy saw the basic conditions, topography and climate of the Earth as determined by the gradual, very long-term effects of slow processes still underway, a neocatastrophist history is also one of often unpredictable and relatively sudden shifts (at least on the geological scale) in the nature of the oceans, atmosphere or biosphere. Davies devotes a chapter to accounts of five previous mass extinctions, their varied causes and consequences, illustrating 'the play of haphazard coincidence that has

formed Phanerozoic history' (118) over the past half a billion years. The Anthropocene in this sense does not support the popular image of humanity in the form of industrial modernity suddenly crashing into previously undisturbed natural harmonies. Instead, 'it makes the current suite of ecological changes the latest in an array of upheavals – some of them desperately harmful to the whole biosphere – that have emerged and reverberated within earth's systems' (30).

The Anthropocene for Davies is in part a tool of evaluation. The concept is a way of gauging and trying to convey the force and scale of changes now underway, relating them to the time and space scales of prehistory and geology ('a way of making current environmental change tangibly a part of this immense and circumstantial pageant' (28)). 'The birth of the Anthropocene is the death of the Holocene, and the problem of the twenty-first century is how to negotiate a way through the transition between these epochs' (148).

To insist on a strictly geological definition would underline how, for Davies, despite its name, the Anthropocene 'is not an anthropocentric concept' (76). The changes affecting the Earth may certainly be instigated to a significant degree by human activity, but many are the side effects of networks of material causation over which humans have no control and, probably, no oversight either. These are material effects that would continue long after the disappearance of humanity itself.

It remains the case that many geologists are very sceptical of the 'Anthropocene' term.⁹ I have heard it described as nonsense and even as a case of academic grandstanding. To many professional geologists, there is also something mildly comical about the haste with which the term has been taken up, let alone the proliferation of all the other newly coined rival '-ocenes', jostling for attention. This includes Jason W. Moore's respected 'Capitalocene', highlighting the significant and arguably decisive factor of the colonial expansion of forms of capitalism over 500 years, but also the 'Thermatocene', 'Polemocene', 'Thanatocene' and even the 'Trumpocene'. P. De Wever and S. Finney describe the meeting of the International Geological Congress at Cape Town at which provisional findings of the Anthropocene Working Committee were given, and how journalists

were announcing prejudged and simplified headlines before the relevant sessions had even been held.¹⁰ De Wever and Finney object that the Anthropocene has mostly been proclaimed by scientists unaware of the strict conditions that must be met for officially announcing a new division of geological time, in terms of markers, records in the sediments, etc., and that the prospective 'Anthropocene' does not meet the strict criteria for defining a new 'epoch', or even a smaller division, an 'age' (as in the various 'ice ages' of the Pleistocene). Not only are properly validated scientific papers still lacking for an Anthropocene, but there is no consensus on when it could be said to start, or what marks it out. It is not a matter, for sceptics like De Wever and Finney, of denying the huge influence of humanity on the planet, but that, given the geologically minute timescales involved for human impacts, it would be prudent, at least for now, to use the term 'Anthropocene' to mark only a significant division of *human history*, like 'the Neolithic', or 'the Renaissance', non-geological terms with usefully variable senses. However, this reduced notion of an Anthropocene would need to acknowledge how deeply new forms of human historical self-understanding must also alter readings of the past.

It seems fair to conclude that the Anthropocene is effectively a *pseudo*-geological concept. It is a loose interdisciplinary translation, being used primarily to mark a threshold in human historical self-understanding, as I argued in an earlier study.¹¹ It takes projections of what the Earth's strata may look like in the hypothetical retrospect of a few million years' time, and it does so with the aim of forming a conceptual threshold in ways that we think the present. This renders it a scientifically sanctioned fiction, one that can even operate like a religious overview, in which geological deep time is almost personified as a kind of judgmental deity standing over human affairs and their fatal short-termism.

For all its fuzziness, contentiousness and frequent superficiality, the term 'Anthropocene' is clearly filling a need in the environmental humanities, whatever its status for geologists. Naming what is new or newly realised about the contemporary world, the term is easier to justify without strict reference to geology or to 'geological

spikes' in hypothetical future strata. An alternative more plural scientific context for using a concept of the Anthropocene is that of work in Earth system science. Particularly relevant would be Johan Rockström's notion of nine planetary boundaries delineating what he calls a safe operating space for human life, the natural systems and processes once taken for granted in or as the Holocene.¹² The boundaries now under pressure concern stratospheric ozone depletion, rates of biodiversity loss, chemical pollution, ocean acidification, freshwater consumption, land-use change, nitrogen and phosphorus pollution, and air pollution or aerosol loading. Some boundaries are already drastically transgressed, as with the vast amounts of nitrogen from modern agriculture already overloading the biosphere (77–78), or the innumerable creatures being driven to extinction.

Such boundary thinking highlights the state of the planet directly in terms of immediate threats to the conditions that sustain current life. This may seem preferable to the strictly geological definition of an Anthropocene. Such environmental fragility is, after all, what is most crucial to everyone. Used in reference to various thresholds at which crucial Earth systems boundaries are crossed, the 'Anthropocene' is necessarily far hazier and more divided as a boundary term than the strictly geological concept, with its need for fairly precise dates and physical markers. The issue is that Earth system limits are being transgressed. For many this means that environmental priorities across the planet should be 'based on returning the Earth system to the Holocene domain, the environmental envelope within which contemporary civilization has developed and thrived' (Will Steffen et al.).¹³

One advantage of using 'Anthropocene' more loosely, in relation to the transgression of plural boundaries in the Earth system, is that this keeps in the foreground its plurality, and its contamination of natural systems with cultural and political questions. A multiplicity of blurry thresholds is also more appropriate to the kinds of moral and intellectual complexity now at issue. For the sake of clarity, future references to an Anthropocene in this book, if otherwise unattributed, will be to this more pragmatic understanding of it.

THE 'ANTHROPOCENE' AND 'MODERNITY'

The Anthropocene sends us back to reconsider our notions of the 'modern' and 'modernity', understanding the latter in the following, dominant sense, as defined by Lawrence Cahoon:

The positive self-image modern Western culture has often given to itself, a picture born in the eighteenth-century Enlightenment ... of a civilization founded on scientific knowledge of the world and rational knowledge of value, which places the highest premium on individual human life and freedom, and believes that such freedom and rationality will lead to social progress through virtuous self-controlled work, creating a better material, political and intellectual life for all.¹⁴

Most accounts of how society might engage with the Anthropocene remain committed to sustaining 'modernity' in this sense, even if needing to acknowledge the jolt now being felt to too simplistic an idea of the West as 'a civilization founded on scientific knowledge of the world and rational knowledge of value'. In addition, the mainstream 'official' view of the future is that modern systems of market economics are assumed to continue, with their veneer of supposedly progressivist programmes of human empowerment through material wealth, while environmental damage is to be acknowledged by tweaking economic accounting to include previous 'externalities' (through carbon taxes, for example). 'The environment', in almost all public and environmental contexts, still names a niche issue to be addressed by measures of minor reform and increased efficiency. The decreasing costs of solar and wind power are hoped to enable them gradually to supplant the place of fossil fuels within the continued expansion of market economies. Wildlife parks and conservation areas are seen to act as refuges for non-human life. Finally, even geoengineering is embraced as a longer-term possibility for 'stabilising' the climate.¹⁵

In this context, the term 'Anthropocene' has risked bolstering a kind of post-neo-liberal fantasy, of an 'Age of Man' proclaiming human sovereignty and management of the Earth, a so-called good Anthropocene, presumably governed by a cadre of scientists and entrepreneurs. Against this, Clive Hamilton argues that the force of the Anthropocene concept, fully understood, is to cast 'modernity' anew as that epoch which deluded itself into the assumption that humanity makes its own history, its own narratives of progress, with the material Earth merely a backdrop.¹⁶ For others, the Anthropocene is the becoming manifest of the dark underside of 'modernity', its destruction of the environment, its deep implication in imperialism, colonialism and neo-colonialism, as well as in modes of hierarchy and discrimination that condemn billions to poverty. All these injustices of 'modernity' become now newly virulent in an encroaching world of climate chaos and fleeing refugees and migrants, while hyper-rich elites consolidate heavily protected enclaves of luxury (the scenario now depicted in numerous dystopian novels and films).

Ecocritics certainly tend to read the Anthropocene this way, as the becoming ever more visible of the environmental violence and social injustice that underlie 'modernity'. It is a view that, for all its stress on non-human agency and references to 'geological' timescales, is using the term 'Anthropocene' primarily as a revisionist *historical*, and not a geological, concept. The salient point is that this is a concept of history which does not deny or marginalise non-human agency.

Nevertheless, ecocritics still work within another, more comfortable part of modernity's traditions of thought, that which 'places the highest premium on individual human life and freedom, and believes that such freedom and rationality will lead to social progress'. One reason that some people might prefer Moore's term 'Capitalocene' is that 'Anthropocene', as a name for a geological shift induced by humans, can give the misleading impression of referring to humanity as whole, crudely overlooking huge differences in wealth, impact and environmental responsibility between people across the

world. Thus it is that debate about an Anthropocene also becomes an occasion for reaffirmations of ideals of group and individual liberation, for the spread of genuine democracy, and for critiques of economic and environmental injustice as being deeply linked. Ian Angus, for example, in a Marxist reading of the global crisis, argues for building a people's movement instilled with ecosocialist ideas.¹⁷ His work expands on John Bellamy Foster's maxim that there 'can be no true ecological revolution which is not socialist; no true socialist revolution that is not ecological'.¹⁸ Davies endorses 'the whole spectrum of initiatives already developed by environmental scholars and activists, from no-tilling farming to indigenous rights campaigns, and from distributed energy generation to participation in electoral politics' (201–202). Also, a 'so-called environmentalism of the poor might appropriately become the type of environmentalism most readily associated with the idea of the Anthropocene' (203). Christophe Bonneuil and Jean-Baptiste Fressoz, in *The Shock of the Anthropocene* (2016),¹⁹ also see it as underlining the urgency of Enlightenment programmes of human liberation, of modernity's element of self-critique. In a multi-centred world where most nations become industrialised, agreement on measures to address a common environmental threat will most likely succeed if we free ourselves from 'alienating dominations and imaginaries' (291). In sum, the Anthropocene needs to be understood within the evolving frameworks of postcolonial and neo-colonial thinking and politics. It becomes the counter-term to a 'modernity' now dominated so viciously by the global accumulation regime of neo-liberal and neo-colonial capitalism.

This is no simple stance. Many of the countries of the so-called Global South now conceptualise themselves in terms of the need to 'catch up' with the more developed parts of the world, usually aspiring to develop their infrastructure through extraction industries and roadbuilding, with the seeming allure of more prosperous, even consumerist lifestyles, the supposed glamour of owning a car, etc., all aspirations and policies not easily compatible with responsible resource use or with engaging climate change.

The dominant impetus in ecocriticism, of reconceptualising environmental problems into issues of social equity, also comes under strain here. Hamilton writes:

Before the 2009 [climate] conference in Copenhagen, China's Premier Wen Jiabao was emphasizing the West's historical obligations, and China then sabotaged the negotiations. Six years later such a stance was no longer possible. Remember, China is now the world's biggest carbon-emitting country by a long way, and the average Chinese person is responsible for more greenhouse gas emissions than the average European. Emissions from the South will soon exceed those of the North.²⁰

Thinkers on the Anthropocene in the environmental humanities may increasingly be divided between those who, like Bonneuil and Fressoz, Davies and Angus, see it as simply reinforcing the adequacy and importance of the progressive, liberatory project of modernity,²¹ and others, such as Dipesh Chakrabarty, who acknowledge that it must complicate or even qualify this project in some ways, given that 'The mansion of modern freedoms stands on an ever-expanding base of fossil-fuel use.'²²

There is already a darker side to Bonneuil and Fressoz's argument. They trace the way that environmentally destructive policies have been pursued over the past few centuries with a conscious understanding of their impact not that different from our understanding today. There is then no credence in the notion of the Anthropocene as some moment of harsh awakening. Instead 'our ancestors destabilized the Earth and its ecosystems despite knowing what they were doing' (291), so that 'everything leads us to fear that things will continue as they have up till now' (291).

A frightening contradiction looms in the scenario that Bonneuil and Fressoz depict. On the one hand, against the forces of environmental destruction, they make a classic post-Enlightenment argument for rationality and liberation from oppressive institutions. On the other hand, they acknowledge that what some are calling the

Anthropocene has in fact been recognised for a long time, and that this knowledge has yet to make a difference.

A key, if often implicit, project for the ecocriticism of the past decade has been to sustain and consolidate its links to 'modern' progressive traditions in politics, while engaging increasingly with such complex and multifaceted issues as global warming. The commitment made is that, if problems such as pollution of the air and the oceans can be traced to causes in unjust forms of social and economic arrangements, then work to criticise or revise these human-to-human arrangements also sustains the faith that environmental degradation is an avoidable and even reversible thing. This view is now compromised to some degree by the recognition that even the immediate overthrow of currently dominant forms of power and economics across the planet, however desirable in so many ways, could not halt changes already underway or latent in the Earth's systems – centuries and millennia of rising sea levels, for instance, due to the fact that the melting of glaciers in western Antarctica has probably now passed a point of no return, committing the world to a sea level rise of 5 metres.²³ As a result, much future suffering will not be ascribable to any single or any immediate human cause, only a dispersed, relatively faceless and partly historical one. Dangerous environmental thresholds, where not already passed, may also be capricious and not fully understood: climate modelling is very sensitive, for instance, to vast uncertainties about future cloud cover and whether the soils will absorb or emit carbon.

A second factor may qualify ecocriticism's commitment to modern, liberatory politics as an environmental panacea: the extraordinarily complex topic of human overpopulation. This is an obviously destructive form of environmental pressure which is still markedly understated in ecocriticism, being often mentioned but almost never discussed. For while a notable factor in human overpopulation is the powerlessness of impoverished women (a clear issue of social and reproductive injustice), overpopulation also stems from factors not so easily amenable to an environmental justice/civil rights agenda, for instance, undeniable goods such as increased longevity and reduced infant mortality. Chakrabarty argues:

Population is often the elephant in the room in discussions of climate change. The 'problem' of population – while due surely in part to modern medicine, public health measures, eradication of epidemics, the use of artificial fertilizers, and so on – cannot be attributed in any straightforward way to a logic of a predatory and capitalist West, for neither China nor India pursued unbridled capitalism while their populations exploded.²⁴

There are signs, however, that the relative evasion of the issue of overpopulation among ecocritics could be about to change, with several thinkers prominent in the field now calling attention to it (namely Greg Garrard, Lawrence Buell and Donna Haraway).²⁵

Nevertheless, while ecocritical readings of literary texts have become possible over the last thirty years largely through taking up modes of politicised criticism already proven in concerns with civil rights issues or Marxist or feminist criticism, and then adapting their terms of reference to embrace questions of the environment and animal ethics, as yet no such intellectual transfer seems feasible that would enable new, consistent methods of reading literary texts in relation to the multiplicitous and contentious issue of overpopulation.

In sum, the term 'Anthropocene' seems set to resemble the terms 'postmodernity' or 'postmodern' of a generation ago: it is inherently uncertain, producing a great deal of pretentiousness, while drawing lines of conceptual demarcation that are both unsatisfactory and intellectually stimulating. Unlike a precise, strictly geological term, its very ambiguity and contentiousness is part of its catalytic intellectual work.

THE CHALLENGE TO INHERITED ENVIRONMENTALISM

For a few years after 2010 it looked as if literary studies were seeing the belated emergence of a distinct school of 'climate change criticism'. Special volumes of journals of literary and cultural theory

appeared in this respect, 'Climate Change Criticism' (*Diacritics* 43.1 (2013)), 'Critical Climate' (*Syncope* 21 (2013)), a special issue of the *Oxford Literary Review*, 32.1 for 2010, and the 'Critical Climate Change' series from the Open Humanities Press. These projects set out to gauge the difficult shift in human self-understanding and values that must accompany acknowledgement of the reality of global warming, its challenge to many inherited modes of thought, including (perhaps surprisingly for some) many in the field of literary criticism and evaluation. After a few years, however, the wider term 'Anthropocene' effectively absorbed this emergent school, with its broader, if vaguer, frame of reference.

Unexpectedly perhaps, the concept of the Anthropocene can also produce problems for arguments in environmentalism. It must question notions of environmental activism as advocating the return of places and ecosystems to some supposed 'pristine' or 'natural' state by means of simply removing human interference. Remove the pesticides, abandon the fields, replace fossil fuels and prevent more plastic entering the oceans, it used to be argued, and, eventually, the natural world will return to some kind of pristine condition, before human influence. This argument is now severely qualified by the fact that the changes associated with the Anthropocene are almost certainly irreversible, at least on timescales that have meaning in human life.

To think of the Anthropocene can be to find anachronistic or just obvious many of the terms of earlier debate in environmental literary criticism. To read now green criticism from the early 1990s, with its solemn reminders that humans are 'part of nature', or that 'culture is embedded in nature', seems like listening to assertions of the obvious. This intellectual shift is not due to some influential new thinker or group of critics, the way, for instance, that literary deconstruction took off in emulation of Jacques Derrida's work. It is a matter of numerous varied responses to the realisation that the fundamental context for all intellectual work has changed, or must be recognised anew, as the ground beneath it becomes unstable.

The challenge of the Anthropocene cannot just be seen in terms of human survival. It heightens a sense of responsibility toward non-human creatures increasingly being driven to extinction. Some

practicalities in nature conservation now risk being overwhelmed by the scale of the environmental crisis and biodiversity loss. Supposed boundaries between nature and culture become more blurred as it becomes increasingly the case that human interventions are required to keep some ecosystems functioning in what may once have seemed their 'natural state'. (In fact, this has long been the case with nature reserves in much of Europe, often committed to artificially sustaining natural/cultural ecosystems dependent on modes of land management that became obsolete with industrialised farming, such as coppicing, traditional forms of grazing, or retention of winter stubble.) Species may need to be translocated. New so-called keystone predators may need be introduced to replace those long extinct: there is even the proposal to use some African megafauna to take the place of long-extinct large mammals in North America.²⁶ The distinction between the wild animal and the captive animal becomes blurred. As creatures are forced more and more to interact with human settlements, or to exist in special reserves or parks, the distinction of the wild and domesticated begins to blur, and also the boundary between animal freedom and captivity. Even so-called rewilding is not a return to some idealised state of nature but is better conceived as a smaller-scale form of geoengineering. Conservation becomes plural and performative, attentive to the kind of 'nature' it hopes to help arise.

An extreme example here is that of the Panamanian golden frog, rescued from extinction in Panama as a victim of a species of chytrid fungus (*Batrachochytrium dendrobatidis*) currently devastating amphibians. American zoologists now keep the frog in 'an emergent ecosystem – a system of holding tanks, public displays, and revenue-generating visitor attractions'.²⁷ However, the original aim of reintroducing the creatures to the Panamanian wild currently seems too great a risk, both because the frogs' original environment is now being altered so quickly and because they could still be the bearers of disease.²⁸

Carl Jones, a leading figure in the fight to save the Mauritius kestrel by a program of captive breeding, writes, 'I am in favour of rewilding, but it will require more management, not less.'²⁹ Jamie Lorimer argues that conservationists should abandon any idea of a

fixed 'Nature', object of a supposedly impartial science, in favour of plural projects of conservation that vary with their cultural contexts and in relation to the kinds of 'nature' they wish to cultivate.³⁰

Rewilding can also happen in unexpected, contaminated ways that bring new challenges. As Western Europe becomes more urbanised, with fewer people in rural areas, once rare creatures such as the lynx, beaver and the wolf have been increasing in numbers once more. Yet the animals are now appearing in only semi-wild or even cultivated places. Foxes are now even a predominantly urban species in parts of Britain. Likewise, Martin Drenthen writes:

Wolves are discovering how to live close to human civilization. Conversely, humans living in these cultural landscapes have to learn what it means to live in increasingly *hybrid* landscapes, in which wild and tame get intertwined.³¹

The Anthropocene might seem then in many ways to underline the status of humans as managers of nature. In others, however, it clearly questions any dogmatic assertion of the human/animal difference. For it raises questions such as how far human ecology on the global scale of vastly expanding populations and unsustainable environmental exploitation, rather than being the result of any sort of rational planning or intention, is fundamentally little different from the population and behavioural ecology of any other animal in the context of a sudden bonanza in resources – grain supplies in the case of proliferating house mice, fossil fuels in the case of human beings. This is the kind of uncomfortable but fundamental issue currently being largely sidestepped by the relative evasion in ecocriticism of questions of human overpopulation.

WHAT IS/WAS 'NATURE'?

These new questions for environmentalists have become part of a rethink about what used to be understood by 'Nature', in the West

at least. It is not just that old notions of 'nature' as that which is unaffected by human activity have become questionable. It is also recognised that the notion of the 'natural' had long functioned, and still functions, in political and dubiously self-legitimizing and suspect ways. For instance, the supposed dichotomy of nature and culture is frequently used to police lines of demarcation between 'the animal' and 'the human', with often fragile distinctions being made between action governed by mere (animal) instinct on the one hand as opposed to full (human) intention on the other.

The term 'natural' functions just as insidiously in other contexts. To say that some product or behaviour is 'natural' (as with the 'natural' ingredients of some food or drink) is often to expect no farther questioning of its validity: 'natural' works as a concept of that which is valuable *per se*, in itself. This relates to dubious sanctifications of so-called wilderness, a tendency especially strong in North America and strongly marking the first decade or so of ecocriticism. It is now widely recognised that what Edward Abbey and others called 'wilderness' was in fact land that had actually supported non-European inhabitants for a very long time, such as the American West, the Arctic, the Amazon forests or the African or Australian Bush.³²

If certain ways of life, usually rural ones, have been praised as more 'natural' than others, then what systems of economics and forms of political authority are also being implicitly sanctioned? Is stating that certain sorts of human relationship are more 'natural' than others, heterosexuality, say, or the nuclear family, merely to deploy the seemingly self-legitimizing force of the word to bolster what is actually convention or social prejudice?

Political thinkers have long been suspicious of the way the term 'natural' has functioned in social discourse.³³ In Western thinking, concepts of nature as the correlative of culture have often served a foundational role. 'Nature' functions deceptively as the essentially political notion of a condition supposedly prior to human politics. The appeal to nature forestalls genuine political debate and contestation. Nature is understood as a realm of facts that should not be disputed, separate from the messy, subjective

world of politics, as a space beyond human affairs, whether consolingly or threateningly.

Yet even the observational science of natural history has been shown to be deeply affected by unwarranted social and cultural assumptions, often in the form of projecting onto non-human creatures what are clearly forms of human patriarchy, with use of terms like 'family' to designate some groups of animals. This has been especially the case in studies of non-human primates, as Donna Haraway has demonstrated,³⁴ but it is also found, for example, in relation to bottlenose dolphins,³⁵ or in R. M. Lockley's *The Private Life of the Rabbit* (1954).³⁶ This was used as an authority on rabbits by Richard Adams in his well-known novel *Watership Down* (1972),³⁷ which depicts rabbit societies in terms of male-dominated warrior castes.

Human social assumptions have also distorted the normality of kinds of same-sex sexual behaviours in non-human creatures.³⁸ 'Nature' has long been a term of suspicion for queer theorists, alert to the general normalisation of a supposedly 'natural' heterosexuality, and the institutions of the family it supports. Catriona Mortimer-Sandilands and Bruce Erickson write:

What does it mean that ideas, spaces, and practices designated as 'nature' are often so vigorously defended against queers in a society in which that very nature is increasingly degraded and exploited? What do queer interrogations of science, politics, and desire then offer to environmental understanding?³⁹

Thus, people who have experienced homophobia, or who find themselves vilified for not conforming to dominant lifestyles, may have a more immediate understanding of the fragility of notions of the 'natural' in human society.⁴⁰

To turn to a specific instance of 'nature' in a literary context, how is A. E. Housman's well-known lyric 'Loveliest of trees' (1896) altered in reading by a new sense of the Anthropocene?⁴¹ Housman had a sense of human life as a brief and impassioned futility, yet there

always remained the seemingly secure background of the natural seasons, a self-evident and seemingly permanent element of growth, fruition and succession, an aspect of life that had always seemed outside any contamination by human stupidities.

Loveliest of trees, the cherry now
Is hung with bloom along the bough,
And stands about the woodland ride
Wearing white for Eastertide.

Now, of my threescore years and ten,
Twenty will not come again,
And take from seventy springs a score,
It only leaves me fifty more.

And since to look at things in bloom
Fifty springs are little room,
About the woodlands I will go
To see the cherry hung with snow.

The poem celebrates 'nature' as the assumed and unquestionable backdrop for human affairs, the cycle of the seasons, and the habitual forms of weather. These are the reassuring harmonies and repetitions of a kind of secular providence, even in a poem by an atheist like Housman. It is the 'ever returning Spring' of Walt Whitman's elegy for Abraham Lincoln, 'When Lilacs Last in the Dooryard Bloom'd';⁴² or the 'word' of the song thrush in Edward Thomas's 'The Word', something remembered and recognised each spring when so many human or historical things are forgotten;⁴³ or Emily Dickinson's 'A Light Exists in Spring'.⁴⁴ Yet these cannot be read in the 2020s as they had before.

Housman's lyric exemplifies one powerful fantasy of what nature is, something beyond-the-human, homogenous and reliable, 'a pleasingly harmonious periodic cycling embodied in the cycle of the seasons, enabling regular anxiety-free prediction of the future' (Timothy Morton).⁴⁵ Housman's poem dramatises the quasi-religious

comfort of this idea. One might also observe that the cherry trees in such a context may not even be the wild cherry (or 'gean'), but a cultivated form, planted to decorate a 'woodland ride' and celebrated for reliably chiming with a human festival ('Eastertide'). Municipal landscaping can help bolster a domesticating concept of natural cycles. For Morton, such a notion of 'nature' is inseparable from the mindset of agriculture or, as he coins it, 'agrilogistics' (38ff). He argues that the ancient practice of sedentary agriculture, in the contexts of the relatively stable climates of the Holocene, has fed into the now fragile idea of nature as a mostly reliable backdrop to human life, a consoling cycle of growth, decay and renewal. Morton even claims that 'the concept Nature isn't only untrue; it's responsible for global warming' (58). By this he means that the illusion of smooth predictability led to a sense of human reliance, of nature as the supremely taken for granted, as both loosely providential and something that could be exploited with impunity.

Oddly, there is a mild danger that environmental protest itself, by its very force of inculcating a sense of loss, may feed reductive and over-idealising images of the natural. Bruce Carroll engages with this question in his paper, 'A Role for Art in Ecological Thought'.⁴⁶ Carroll considers how some 'ecologically inclined' installation art may unwittingly project a false image of nature: his examples are Mary Mattingly's photo of a naked body lying under a wrapped ball of garbage,⁴⁷ or Cai Guo Qinang's *The Bund without Us*, a barge on the Shanghai waterfront full of human-size stuffed animals, or Maya Lin's installation website, 'What is Missing?', a memorial to lost species in the form of a map of the world marked with numerous clickable e-dots, each leading to texts and images of some now extinct species.⁴⁸ Each of these works makes a forceful point about human environmental violence, but with 'their shades of self-flagellation' they also project an image of what is lost which already has elements of fantasy, of 'an Edenic nature that is always in the past, "over there", impossibly other from ourselves'.⁴⁹ Such installations, and innumerable polemics in environmental rhetoric, 'appeal directly to our guilt over what we have done to a divinized, salvific conception of the natural'.⁵⁰

If appeals to 'nature' and 'the natural' have lost credibility as self-evident values this cannot but entail major questions for ecocriticism. A green critic can no longer, without qualification, argue that they are defending some natural state of things against human interference. The 'Anthropocene' entails also the realisation that older notions of 'nature' and 'the natural' have tended to fetishise 'harmonious man-and-nature origins',⁵¹ and that environmentalism cannot, in a world of irreversible climatic shifts, remain viable if it is basically a kind of idealising nostalgia.

So *what state of things is it that ecocriticism is now defending, or aspiring to?* The implication of debate about an 'Anthropocene' is that humans must, in diverse ways, assume some sort of stewardship of the Earth, however limited, compromised or chastened that stewardship must be, especially if it is acknowledged that any return to Holocene conditions may be impossible. For on a planet where human activity impacts every area, even the choice to do nothing, or to let nature take its course, is already a decision that must actively be made. This fact becomes more apparent every year in the way that 'the environment' becomes a term increasingly entangled with all kinds of human statutes. Open any page, for example, of the natural history journal *British Wildlife*, and you will find it dominated by references to environmental statutes and regulations, 'targets' and ecosystem management schemes. Although ecocriticism likes to present itself as having a broadly liberatory caste, it is a depressing fact that most environmental measures entail increased regulation and even surveillance of some sort.

Ursula Heise suggests that the general frame for questions of environmental politics and activism in the future should be the aim of doing justice to the interests of human *and* non-human life together, even as it must be recognised that species have competing and even incompatible interests. Heise writes, in slightly US-centric terms:

the insights of animal welfare advocacy may become newly useful to environmental ethics as environmentalism shifts from

its principal investment in wilderness as the ecological ideal [though this was never quite the ideal in Europe or elsewhere] to a view of nature as globally domesticated in the framework of the Anthropocene.⁵²

Despite tensions, a broad consensus about the value of contemporary ecocriticism does exist. Ecocriticism's goal can provisionally be described as that of some state of human freedom and flourishing in which non-human life is fully recognised, no longer violently exploited nor its resources abused or exhausted. The implication of most concepts of an Anthropocene is that human communities should take fuller responsibility for the kinds of 'nature' and environment they wish to inhabit, whether this then entails a chastened withdrawal from human interference in ecosystems or a creative intervention in them. Environmental politics across the world seems likely to become increasingly a form of *casuistry*, in the strict sense of the making of judgements on a case-by-case basis, sensitive to local conditions, rather than the sweeping imposition of universal criteria. The accelerating internationalisation of ecocriticism itself, with work now appearing from all continents bar Antarctica, is set to be a crucial context for this pluralisation, both of 'natures' and of environmentalisms.

2 Scalar Literacy

Many of the best essays in green criticism since about 2010 have been meeting the often counterintuitive challenges of thinking on the planetary level. Issues such as global warming or ocean acidification, so overwhelming in scale, can threaten to dwarf any individual or state action, even as both phenomena cannot immediately be seen, localised, or in many cases, even acknowledged. One of the most influential terms in recent ecocriticism of the past decade is 'hyperobject', coined by Timothy Morton, and meaning entities so massively distributed, both in space and time, that their reality exceeds being adequately grasped at any particular time or place.¹

'Scale' becomes a new focus of critical debate.² The fact that major environmental issues and changes are now largely outside the range of local, embodied perception has had the effect of enmeshing environmental questions more deeply and perplexingly into the nature of politics and social debate. Uwe Kückler writes:

As climate change knowledge is greatly specialized, people can hardly use their own senses to verify the trustworthiness of claims about it ... Therefore, they need to rely on policy makers and academics to judge these claims. The 'lay population' must base their decisions on believing those institutions and emotionally trusting them. Therefore, it seems that decision-making boils down to convincing narratives, compelling images, or culturally coherent symbols about climate change and its future impact.³

This situation bestows new importance on art and cultural representations, the domain of ecocriticism. But how to present a complex global issue in an effective and coherent literary work? This

chapter takes up the challenge of giving sensuous representation of scales in space or time that greatly exceed immediate perception.

Questions of physical scale have always been prominent in the environmental movement. 'Think globally, act locally' is the famous slogan often associated with Friends of the Earth. It says that environmental activists need to work on at least two scales at once. They should try to understand ecological systems on the global scale – asking how some new so-called relief road or so-called car park will damage biodiversity and increase the burden on the atmosphere – and then take action locally in accordance with that understanding – say, protest to the government, demonstrate in the doomed woods. The inherent logic is also, paradoxically, that one cannot *only* act locally, that any action affects the whole world, however minutely.

A stress on the local was a leading feature of ecocriticism during its first two decades. Green critics focused on texts engaged with local places: Wordsworth and the Lake District, John Clare and his part of Northamptonshire, Henry David Thoreau and the woods of Massachusetts, Thomas Hardy and Wessex, Wendell Berry and the region of his farm in Kentucky and so on.⁴ There remains strong interest in the so-called bioregional movement, with its proposal that human societies, their modes of production and cultures, should be determined from the bottom up, with close and sustainable relations to their local bioregions, local products, local food, and with reference to the ecological literacy of traditional or indigenous cultures. These tended to see themselves in terms of a retrieval of the relatively 'natural', supposedly conserved from the contaminations of international capitalism.

A problem with overstressing the local as the supposedly 'natural' is that it may make undue assumptions about time-scale. Local ecosystems change and affect each other over the centuries, while human beings have been shifting plants and animals across continents since prehistory. That which an ecocritic may want to idealise as local may in fact be only a freeze-frame version of a dynamic, long-term process, as with the Norfolk Broads in England, an ostensibly natural wetland landscape formed in fact

by the combined, unstable influence of medieval peat diggers, erratic rivers and changing sea-levels. The same point applies to human cultures, and to overly romanticised notions of the indigenous or native in human populations. George B. Handley writes that arguments celebrating the regional too often 'offered a temporal freeze frame of diasporic histories and intermixing peoples who were the result of both forced and creative changes'. They may offer 'a spatially frozen frame as well',⁵ for as soon as one tries to trace the particular stories of, say, people in Cuba or Brazil, these limited spatial and temporal frames are transgressed by histories that encompass other regions, in Europe, in Africa and in lost pre-Columbian nations.

SCALE CRITIQUE

Environmental work in the humanities often becomes a matter of developing kinds of what might be called *scalar literacy*. A term proposed by Derek Woods is 'scale critique'.⁶ This names an emerging concern with scale within the environmental humanities, covering the work of critics such as Dipesh Chakrabarty, Mark McGurl, Timothy Morton and Ursula Heise. Scale critique would be an intellectual practice attentive to the way the nature of an issue or situation alters according to the scale at which it is considered. This entails a form of deconstructive attention to concepts and assumptions: for what may seem coherent, self-contained consistent or virtuous at one scale may be very different at another. Jim Dator writes:

Environmental, economic, technological and health factors are global, but our governance systems are still based on the nation state, while our economic system ('free market' capitalism) and many national political systems (interest group 'democracy') remain profoundly individualistic in input, albeit tragically collective in output.⁷

Many forms of thinking previously taken for granted, or certain norms in politics, in ethics or in relation to physical or other systems, must increasingly be recognised as operating only under certain, usually unexamined assumptions about their scale. This often-uncomfortable sense of scalar relativity is one of the most significant side effects of the Anthropocene concept, with its references to deep time.

Environmental arguments are, sometimes despite themselves, a major site of scale critique. They may consider current forms of human behaviour, such as deforestation in the tropics, pollution or modes of economic growth, and then extrapolate from present trends into a broader timescale. The result is that, along with patently destructive practices such as coal mining or overfishing, or with more ambivalent or double-sided issues such as increased material prosperity or human longevity, even some activities that seem environmentally beneficial in the present, at the individual or the national scale, acquire another, destructive face at broader scales. For instance, widespread use of biofuels in one region may entail increased deforestation in others, and, as crops are given over to uses other than food, mean rising food costs and social unrest.

Its earlier excessive valorisation of the local is behind a fact about ecocriticism that now seems very odd. That it was not until 2009 that its leading journal *ISLE* carried an article whose main topic was the most important environmental threat of all, climate change, a paper, that is, *directly* addressing it as its sustained focus.⁸ Since 2010 an older-style Romantic-humanist ecocriticism, focused on the local and on retrievals or affirmations of more supposedly 'natural' or 'ecological' modes of living, has been in crisis and is rapidly transforming itself. Things started to shift in 2008. Ursula Heise's book *Sense of Place and Sense of Planet* (2008)⁹ challenged the cult of localism in environmental circles. Rather, is not a new green cosmopolitanism at least equally suited to a world in which impacts so immediately disregard borders? The cult of localism also underplayed the degree to which the local and the global have always been implicated in each other. The contemporary challenge inheres more in irreversibly mixed places like, to take a random example, Taiwan, an island with

many indigenous groups and subcultures, 'at once developing and highly advanced', and with 'the ironic, multifaceted identities of a society teetering between post-colonial exploitation and first-world power'.¹⁰

Disconcertingly, the import of thinking about climate change has been that many ecocritical arguments had been taking place on the wrong scale or had evaded the need to think on several scales at once, as well as how the need to think on several scales at once may entail conflicts and contradictions. More recent ecocriticism is often pioneering a reorientation of the sense of time and periodisation as fundamental modes of human categorisation and conception: what does it mean, for example, to find Housman's 'Loveliest of trees', Shakespeare's plays, Homer's *Odyssey* or the *Mahabharata* as texts that now read, newly estranged, as products of the late Holocene, the geological epoch arguably now ended or eroded, with its fading assumptions of the regular periodicity of familiar seasons as providing a sense of background order and unregarded reliability for human affairs?

An early example of work espousing a bioregional cosmopolitanism and corresponding kinds of scalar literacy is Mitchell Thomashow's *Bringing the Biosphere Home: Learning to Perceive Global Environmental Change* (2002).¹¹ Thomashow develops the traditional 'green' stress on the local, revising and extending it to suit recognition of the global dimension of issues:

Interpreting the biosphere is such a profound conceptual challenge because it entails stunning juxtapositions of scale –moving from a fifteen-minute thunderstorm to a million-year climatological trend, shifting from tending your garden soil to observing the patterns and trends of biodiversity. In making these shifts, in learning how to move through diverse spatial and temporal realms, you are more likely to perceive global environmental change. (106)

Thomashow advocates the teaching and cultivation of what he calls biosphere perception, the ability to see in local phenomena – soil,

weather, tree species, a water course – wider regional and global patterns, as well as expanding a sense of the various time frames of what one can see. He presents various intellectual and practical exercises for improving scalar literacy. These may call on technologies such as satellite imagery, or on microscopy, or on the kinds of shift entailed by reading certain fictions and popular science, or through working to identify with 'the lives of nonhuman animals, their modes of perception, their sense of territory or their migration routes' (95).

As an example of this kind of exercise of imagination, Thomashow celebrates the popular science writing of the paleontologist Richard Fortey, and the way Fortey's long study of the creatures of 450 million years ago enables 'a fantastic immersion into a world that he can never quite know' (114), leading to new sensitivities to biological history in the natural world of today ('the sound of the ocean on the Arctic shore, a stromatolite mat, a low-lying liverwort, or an unexpected fossil discovery on a lonely hillside' (114)). A sense of deep time can elicit an ethical jolt that makes us reconceive the present: we come to inhabit vaster realms of space and time as being also genuinely local. (Jeremy Davies defends his use of the term 'Anthropocene' precisely because it delivers such a jolt to our scalar complacencies.)

SCALE IN TWO 'ANTHROPOCENE' CRITICAL READINGS

The volatility and contentiousness of local space informs Eric Gidal's rich study of 2015, *Ossianic Unconformities: Bardic Poetry in the Industrial Age*.¹² This is a green version of a small school of criticism for which questions of scale are central, so-called geocriticism. Geocriticism studies representations of space in literature, of how different people, cultures and times perceive and represent places in varying ways, and how such understandings change and conflict with each other. Gidal's work of literary mapping is distinctive, however, in that it also tries to include the chastening scale of early work in geology and offers itself as a form of Anthropocene criticism.

His focus is the so-called Ossian poems, fantastic and hugely popular epics of a supposed Celtic history concocted, translated and invented from various Gaelic sources in the 1760s by James Macpherson, who passed them off as the discovered work of a blind third-century bard called 'Ossian'. Ossian narrates heroic battles, mainly, in north-western Scotland, against Scandinavian and also Roman invasions, albeit with a pervading melancholic sense of Celtic culture as doomed finally to fall. The poems blend a pastiche Homeric heroic language with that of eighteenth-century sentimentalism. The historical context for Macpherson's invention is decisive, the sometimes brutal suppression of Highland Gaelic culture during the second half of the eighteenth century and its absorption to Lowland Scots norms of economics and government, in an emerging and commercially powerful British State.

Gidal's focus is on responses to the Ossianic poems over the next century, the claims for and against their authenticity, from statisticians, historians, novelists, ministers. For instance, Gidal cites the early response of the German philosopher Johann Gottfried Herder, who had lived a boat trip along the Scottish coast as his own immersion in a kind of Ossianic theme park, fantasising the place as haunted by a lost heroic and organic community (a kind of primitivism since projected on numerous other marginalised peoples, and not always absent from early ecocriticism). The interest for Gidal is how different projects of writing and mapping engaged the deeply felt disjunction between an almost inaccessibly distant and perhaps mythic past and a contemporary context, in the same places, of accelerating industrialisation, agricultural modernisation, depopulation and rapid social change. Projects about Ossian exemplify for Gidal how 'oral traditions and indigenous knowledge are reinvented by industrial print culture' (4). The local is many-layered, haunted by real and unreal pasts. Some people sought to map, and effectively appropriate, the whole area in ways that recall the close connection between cartography and civil and military power, as well as enabling cultural fictions of a heroic Celtic past to bolster ideologies of a Scottish national identity.

What of the vast scales associated with references to an 'Anthropocene'? Setting up his study, Gidal refers to the emergence at this time of modern geology in James Hutton's *Theory of the Earth* (Edinburgh, 1795). Hutton had studied rock strata in Scotland to ponder the implication of what he called 'unconformities', places where horizontal layers of rock are suddenly interrupted, broken and sometimes even inverted, with newer rock even coming to lie underneath the older. These unconformities demonstrated geological processes that can only have taken place over unimaginably vast scales of time, scales that must mock prevailing ideas that the Earth was only some thousands of years old.

Gidal argues that 'Reading Ossian in the age of the Anthropocene gives new saliency to a figure at once familiar and unique' (150). Nevertheless, *Ossianic Unconformities* is essentially a study of differing *cultural* perceptions of long *historical* time, with Earth science being taken up almost entirely in a metaphorical way. Hutton's 'unconformity' is assimilated as a cultural metaphor, as in 'the Ossianic unconformities' of the title and throughout. Likewise,



IMAGE 2 Hutton's famous angular unconformity at Siccar Point, Berwickshire, Scotland, Mark Godden/Shutterstock.com.

we read: 'Ossianic poetry displayed on every page the sedimentations of place and the erosions of time' (60). Such diction is a considered example of the way much recent ecocriticism has taken to geological metaphors, often far more casually than Gidal.

Gidal's thoughtful study demonstrates how notions of an Anthropocene can be a catalyst to new, insightful work, but also how impossible it is to assimilate truly vast scales in space and time without the geological scale inevitably turning into some sort of cultural-political term or argument on the human scale.¹³ 'Unconformity' becomes a 'figurative conceit to explore how a marginalized and discredited literature provides a compelling language to register and reflect upon the social and spatial disruptions of industrial modernity and the stratigraphic consciousness of geological deep time' (12). Gidal's scholarship is alert to historical and cultural disjunctions and anachronisms in Ossian itself, including Macpherson's pseudo-scholarly commentaries and notes, and the poems' multiple reception. These all become what Gidal calls types of 'textual unconformity' in a *biblio-stratigraphy* of accumulating texts (45).

In sum, despite offering an account of the emergence of geology at this time, Gidal's geological metaphors rebrand what are in fact well-established modes of cultural-political and postcolonial analysis from earlier generations. Historical texts which might ten or twenty years ago have been described as 'dialogic' in Mikhail Bakhtin's specific sense of texts incorporating a heterogeneity of genres and conflicting social discourses¹⁴ – the clash, say, of progressive and degenerative theories of historical change; between Homeric pastiche and the language of tour guides; between industrial-age nostalgia and genuine Gaelic traditions – are now being recast as analogous to 'geologic unconformities'. Similarly, the introduction to an anthology of essays from 2017 (*Anthropocene Readings*) describes the Anthropocene itself 'as an unconformity in literary history', one in which 'divergent and seemingly incompatible histories rub up against one another, highlighting the potential for the future to remake the past'.¹⁵ The problem with this appropriation of the geological as metaphor is that it glosses over the extraordinary

disjunction in timescales occluded in the analogy between Earth history and cultural history.

Benjamin Morgan's essay, 'Scale as Form: Thomas Hardy's Rocks and Stars' states part of the problem with juxtaposing human and geological scales of time. He analyses Hardy's ironic technique of contrasting in his novels the scale of human life with those of astronomy and geology, as in the famous scene in *A Pair of Blue Eyes* (1873) in which a character, Stephen Knight, hangs desperately off the crumbled edge of an enormous sea-cliff, and finds himself staring into the eye of fossilised trilobite. Morgan writes:

Hardy's attempt to integrate deep time and space with narrative structure is instructive in the context of the Anthropocene ... because it calls attention, through its failure to escape anthropomorphism [in their mocking 'awfulness'] to the real epistemic challenges of nonhuman time scales. Hardy cannot but refract nonhuman scales through a language of human value, even in order to express them as lacking in value.¹⁶

Similarly, if the study of Ossian is a kind of 'Anthropocene criticism', then concepts of an Anthropocene remain less a geophysical than a revisionist historical concept, embroiled in debates about cultural value. Earth science offers a basis for metaphors which may slightly re-inflect and challenge our thinking on the 'normal' human-to-human scale, but they can barely challenge or escape the normativity of that scale in cultural debate.

Such exercises of scale shifting demonstrate that the Anthropocene works in practice as a term in which the humanities and natural sciences could never be separated, given the deep intrusions and fractures that each makes in the would-be consistency of the other, to use the now inevitable geological metaphors. The Anthropocene debate is the spur to a new global ethics, aware of human cognitive, finitude, fragility and contingency. Richard Grusin's introduction to *Anthropocene Feminism* (2017) points out that 'the concept of the Anthropocene has arguably been implicit

in feminism, critical theory, and queer theory for decades'. Long-combated masculinist or individualist fantasies of control and autonomy are now having to give way to 'the problematic forcefully articulated in Donna Haraway's "Cyborg Manifesto" [1984], which sees the human, nonhuman, culture, and nature as inextricably entangled, and warns that the consequences of attempts to dominate human and nonhuman nature can be at once devastatingly successful and productively perverse'.¹⁷

The Australian critic Kate Rigby, like many environmental activists, has no hesitation in using references to an Anthropocene as a moral message, claiming 'the value of [literary] writing in the Anthropocene in the mode of prophetic witness'. The title of her paper is 'Writing in the Anthropocene: Idle Chatter or Ecoprophetic Witness?', from 2009, relatively early for such debates.¹⁸

Rigby's focus is the reading of a poem by Judith Wright of some fifty years before, 'Dust.'¹⁹ This depicts a land in severe drought in northern New South Wales, a desolation traced to unsuitably European farming practices:

But the wind rises; but the earth rises,
running like an evil river; but the sun grows small,
and when we turn to each other, our eyes are dust
and our words dust.

Rigby's notion of the critic as a 'prophetic witness' is drawing on the way in the Old Testament droughts are seen as divine retribution for human wrong (the dust is 'sick'). Wright's poem was written during a drought of 1942–43, and she is clearly associating the degradation of the land with the colonial violence of Australian settler society, a violence against both place and native people ('Our dream was the wrong dream/ our strength was the wrong strength'). For Rigby in 2009 this is now given intensified relevance in the global environmental crisis of the twenty-first century. The dust storms are taken as a local phenomenon manifesting what is now a global predicament. Rigby writes:

the plight of Earth's waters, forests, soils and atmosphere, and of those myriad creatures, human and otherwise, whose life depends on them, obliges us to utterance, even though we know that our words, no matter how artfully wrought, are bound to be insufficient either to prevent or to bespeak the unprecedented horror of the ecocide of which we ourselves are both the victims and perpetrators.

Rigby's reading of 'Dust' exemplifies the way that, for most ecocritics, art, literature and criticism are expected to take on a socially redemptive role. The new artistic and critical task is to make 'real' or make felt on *the human scale* all these alarming but also boring statistics on the planet's condition that everyone reads but does not register. In relation to the Anthropocene, one role for literature and art is seen to be one of *scalar translation* – that is, as with Thomashow's exercises, to transpose into a representation on the human scale events and processes that exceed or escape the usual geographical and temporal limits of how we think, or feel involved (for instance, when geologists observe that human history, on the geological scale, is 'only an eye blink', they are performing such a scalar translation by anthropomorphising the geological scale itself). Thus for Rigby, 'Dust', which might actually concern a 'natural' drought, is taking a dust storm as representing a far broader context.

Wright had held a view of conservation as a form of cultural atonement, though perhaps too keen to appropriate the values of Aboriginal people to those of modern environmentalism. Elegies like her 'Bora Ring' and 'Nigger's Leap, New England' depict an apocalyptically ravaged land.²⁰ In Rigby's essay the term 'Anthropocene' takes on a quasi-religious sense, as it does in the common usage of the term to express a human folly now bringing about its own destructive retribution. In a paper written five years later Rigby suggests that the exploding use of the very term 'Anthropocene' is a positive symptom of how people are coming to rethink the scale on which human responsibilities must be conceived, and that 'confronting catastrophe does not mean succumbing to despair'.²¹

SCALE AND COMPLEXITY

Since 2010 an old-style Romantic-humanist ecocriticism focused on the local has come under strain. Essays that affirm the regional, or, for example, the sustainability of indigenous land management, continue to be published, but now within an ever more complex global context that may already threaten or erode the conditions of possibility of what they advocate. Successes in reform environmentalism in one country, say preserving an area of rainforest in one region or working to protect a coral reef from bleaching in another, may be negated by the lack of such measures in others or simply by the side effects of more pollution or growing population elsewhere, let alone the continuing global dominance of a capitalist economics that continues to commodify and destroy vast areas of the world.

Bryan G. Norton observes how in buying a pineapple from Costa Rica he may think he is helping support impoverished workers there, but that his purchase also helps consolidate destructive forms of land use.²² Johan Rockström offers another example, on how a more enlightened fisheries policy in Europe may have led to the Ebola outbreak in Africa:

When the EU ... revised fishing policies not long ago to drive high-tech fishing fleets from their 'home waters', few political leaders could have anticipated that they were launching a string of events that potentially is associated with the world's worst outbreak of the ebola virus. In response to the EU's tighter fishing quotas, international fishing fleets moved their operations to the coast of West Africa, where they 'vacuumed' up vast stocks of fish. This was the same area where climate change, pollution, and mismanagement of local fisheries had already degraded local mangrove forests, sea grass beds, and coral reefs. The combined effect was a rapid decline in catches for African fishermen, who, faced, with a shortage of food, have increasingly turned to bushmeat as a substitute to feed their families. As a result, local trading patterns shifted, with hunters killing more forest animals such as chimpanzees that are key sources of zoonotic diseases such as ebola.²³

The Earth has become itself an increasingly hybrid entity in which human impacts interact in emergent ways with partially understood ecological systems, with sometimes counterintuitive interactions that cross the continents. To give a simple example of the problem: nothing in the sight of the contents of an ordinary shopping basket will make visible the lost tropical forests implicit in the palm oil used in about 50 per cent of consumer products.

This example of invisible deforestation suggests another disturbing way in which the term Anthropocene might be usefully characterised: it names a global context in which the normal immediacy of human perception – in the sense of norms of reality projected merely by human embodiment and our organs of sense perception – now tends, insidiously, and through no fault of its own, to become an environmental problem, one basis of climate change denial for example.

An intensified sense of the contingency of the scale that seems ‘natural’ to human beings may be crucial in developing an inter-species ethics. At a time when multiple extinctions are shredding the integrity of the biosphere, there becomes an urgent need for greater public awareness of the different modes of time and space that make up the ‘world’ of other creatures, and how their lives ‘depend on distinctive and often fragile synchronies and patterns, speeds and slownesses, interwoven temporalities increasingly interrupted by disturbance of a [human] species “out of time”, pursuing short-term profits or producing near immortal products’, such as the plastics fatally ingested by sea creatures (Deborah Bird Rose, Thom van Dooren and Matthew Churlew).²⁴ In this respect, an ecocritical take on Rockström’s tracing of the causality of the Ebola outbreak would question, among other things, the very practice of industrial fishing, a crucial link in the chain of disaster he traces.

The challenge facing environmental campaigners and ecocritics will be to find ways of relating specific texts or issues of environmental wrong to the complexities of the global environmental crisis, without letting a sense of its conflicts and contradictions become merely paralysing. Questions must arise here about Rigby’s use of the term ‘Anthropocene.’ Her use of Wright’s poem as a mode of

scalar translation is a simplification – for the Anthropocene with its *global* referent could well encompass not just a drought in eastern Australia, but also, say, sustained warm autumn weather in north-east England, altered Arctic sea-ice cover, healthier vegetation in the CO₂ rich atmosphere. If you also accept that human overpopulation has to be part of the issue, then the Anthropocene looks back at you even in the faces of babies and children, and in the fact that people in many countries are living longer. At the same time, the fact that the Anthropocene is more puzzling than the scenario of colonial agricultural violence that Rigby depicts would hardly form an argument

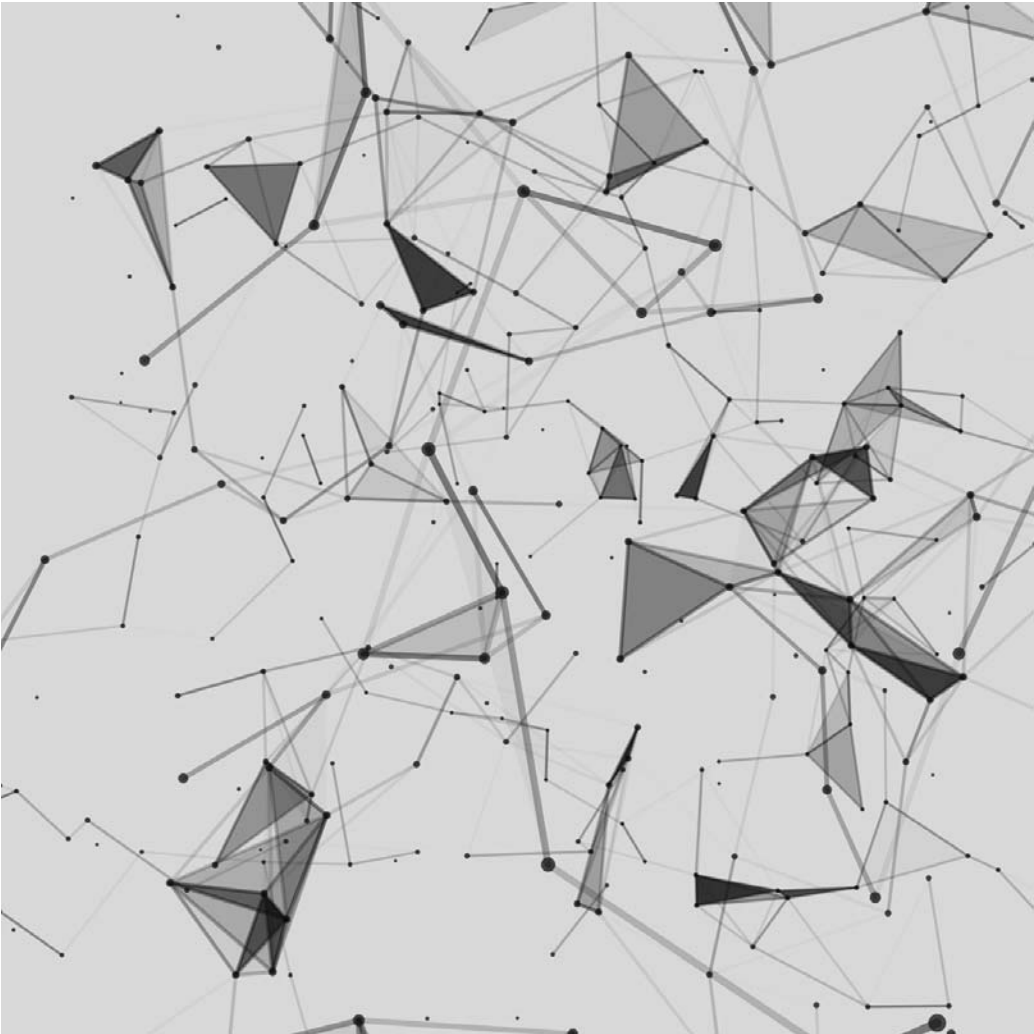


IMAGE 3 *Complexity*. 'Abstract vector illustration. Background vector. Plexus effect', Yevhenii Borshosh/Shutterstock.com.

against protesting such things. It does, however, enforce the need to be wary of sweeping, one-dimensional diagnoses of something to be called '*the Anthropocene*', as if it were not in fact plural, dispersed and full of contradictions. Scalar literacy here would mean seeing the implication of bad agricultural methods in vaster, global changes, but without seeing the global scale as, effectively, simply this local one blown up to a larger size.

KIM STANLEY ROBINSON'S 'SCIENCE IN THE CAPITAL' TRILOGY

One of the most popular novels on climate change to date provides another case study of how questions of scale can inform a critical reading. This is the 'Science in the Capital' trilogy by Kim Stanley Robinson, published between 2004 and 2007.²⁵ This novel in three volumes is set in the near future and its mode of representations are clearly meant to fulfil the demands of plausibility and probability associated with conventional realism – no sudden all-solving interventions by aliens, no guilds of wizards, no futuristic technology. It is set mainly in Washington, DC and depicts the coming to power of an enlightened US president who manages to lead much of the world in a series of vast geoengineering measures to stall the onset of sudden, catastrophic climate change.

Robinson had tried to depict climate change in his earlier novel, *Antarctica* (1997), but had found the issue intractable. He complained: 'In individual human time, which also means ordinary novelistic time, [climate change] would almost certainly happen so slowly that it would be hard to imagine or depict what it would mean.'²⁶

He also says:

As a novelist, it's obvious: you know, if something happens in three years, rather than five hundred years, you're better off in trying to figure out a story of how human beings are impacted and you can just frame the story better. And I've been interested in global

warming for a long time, but I hadn't figured out a story to tell until I heard about [the possibility of] abrupt climate change.²⁷

Hence, the timescale of Robinson's trilogy is about three to four years. If one were to subject his 'Science in the Capital' series to scale critique, one might argue that climate change is only engaged here insofar as one specific, extraordinarily abrupt and probably unlikely version of it has been shoehorned into the dimensions and template of an individual human interest story. This is also where questions about conventions of human characterisation in a novel arise, their seeming to determine what the novel can and cannot represent. Robinson's trilogy focalises its action through the stories of several central characters, primarily one Frank Vanderwal. This main character is a scientist, pictured initially as a careerist who uses to his own advantage his role in the government funding of research projects. But he then becomes more and more engaged with the personal, institutional and social demands of a disastrously altered climate, as the sudden stalling of the North Atlantic current leads at once to what seems a new Ice Age, with drastic sub-zero temperatures in Washington. Then the West Antarctic ice shelf begins to collapse, threatening devastating rises in global sea-level. Frank becomes a key figure in what Robinson depicts as the metamorphosis of the National Science Foundation in Washington into a body whose networking finally creates a set-up in which scientific knowledge comes fully to inform the workings of American politics. The trilogy has been praised for its relatively detailed attention to the way science and its institutions work, at least in the USA.²⁸

An earlier, famous trilogy of Robinson's about the future colonisation of Mars makes an obvious foil for the 'Science in the Capital' novels. The Mars novels are celebrated as putting to work a posthumanist vision according to which altered material contexts affect both human physiology, with posture and gait changing in one-third Earth gravity, and the human psyche, its sense of physical and social space.²⁹

This posthuman element is arguably present in the later trilogy too, but to a far lesser degree. Robinson dramatises the way the social and physical dislocations of drastic climate change momentarily open up a space of freedom from old norms, of disaster as weirdly liberating and socially unifying, at least at first. As temperatures plummet, there is the weirdly festival-like atmosphere of multicultural ice-skating parties on the river in Washington (*Fifty Degrees Below*, 362–3). There is Frank's weird sense of exhilaration at finding himself in love in the midst of disaster.

Scale effects make us reconceive of human life within far less predictable and even capricious contexts of social and material change. They may open a vertiginous sense that almost anything might happen. Robinson's text is open to this but then drifts further and further away from any sort of credibility. He depicts this collapse of old norms not, as most predict, as a social breakdown leading to chaos and then forms of tyranny, but as an opening for a more utopian politics, embodied in the tale of Frank's moral growth and, finally, in the emergence of a new saviour US president – a kind of inverted Donald Trump – full of the doctrines of a progressive new-age environmentalism. The timescale of this very US-centric novel is also deeply implausible. Would it really take only a few years for a drastic climate shift to be confirmed and for the conflicting and multiple nations of the world both to achieve agreement on two separate massive geoengineering projects, and then to put together the material infrastructure and resources to put them into practice?

This implausible time frame seems determined by the normal timescale of character development in a largely realist novel. The artistic danger of such a strategy is that the human-interest story, being precisely that, comes to overshadow almost all else in a reader's mind. The story of Frank's development follows in fact an old Romantic-humanist paradigm, that of the recovery of some supposed 'whole self' and existential purpose through social bonding and shared goals. He comes to give up his earlier, rather cynical, sociobiological view of human behaviour as only the anachronistic expression of the Pleistocene conditions of human evolution. A chief factor in his gradual conversion is his encounters with a group of formerly Tibetan

refugees from a drowned island state, and the aphorism from one of them that 'an excess of reason is itself a form of madness'. However, the effect of this epiphany on the 'excess of reason' is not to send Frank to Buddhist texts, but to a source of online daily quotations from the nineteenth-century American transcendentalists Henry D. Thoreau and R. W. Emerson. In effect it is an assimilation of a rather stereotyped Buddhism to the dated tradition of Romanticism from which American environmentalism has often drawn its energy, with its trite ideals of the recovery of some vaguely understood 'whole self' supposedly atrophied or alienated in modern, industrial society.³⁰

To sum up, a scale-critical reading of Robinson's trilogy renders this well-known text an experiment concerning the kinds of scalar norms and expectations that determine the aesthetic representation of climate change and public engagement with it. It may make a reader question a certain evasiveness in the novel's utopian turn, while the distortions inherent in the moulding of climate change to the scale of a human-interest story raise disturbing questions about how far this issue may challenge or even elude artistic representation.

In highlighting the limits of Robinson's trilogy like this, a scalar ecocritical reading nevertheless advances its general cultural aim of enhancing our ecological literacy, even if only to highlight the dangers of simplification in response to the complexities of global environmental degradation. Similarly, Gidal's rich geocritical study of Ossian exemplifies one way in which the kinds of scalar jolt associated with notions of an Anthropocene can both invigorate and evade cultural/historical scholarship. Rigby's reading of Wright's 'Dust' does justice to the environmental and postcolonial ethics at work in the poem while exaggerating the status of its topic as a global symbol. Each text, in its very different way, instantiates the new aesthetic and representational challenges being taken up at the current frontiers of ecocriticism.

3 Ecopoetry

Many new movements in poetry tend to be controversial, even scandalous – think of the receptions of William Wordsworth and Samuel Taylor Coleridge's deliberately anti-'poetic' language in *The Lyrical Ballads* (1798), or the vehemently anti-establishment stances of various avant gardes since the 1790s. A striking feature of poetry with an environmental ethic, however, is that a lot of it seems to arise as result of public or academic expectation, or from institutional initiatives such as a commission for an anthology or a journal (for example, by the *Guardian* newspaper in 2010).¹ *ISLE*, the leading ecocritical journal, always reserves a section for new poetry. The term 'ecopoetry' has also been used to reframe long-published or well-known poems in slightly opportunistic new anthologies.² Hence no specific stylistic stance stands out for many poems that have been championed, or recycled, for their loosely environmental values.

In this particular context, however, 'ecopoetry' names something more specific. Environmental concerns have become both increasingly unavoidable for poetry, and implicated in profound questions as to what poetry is or can be. The specific term 'ecopoetry' is also used to describe a protest stance, as is witnessed by a proliferation of proposed new genre names. In relation to the traditional category of pastoral alone there have been 'post-pastoral' (Terry Gifford), 'radical pastoral' (Greg Garrard), 'toxic pastoral' (David Farrier), 'necropastoral' (Joeyelle McSweeney) and 'dark pastoral' (Helen I. Sullivan).³

Why all these new coinages, as if what we assume poetry *is* must now change? In a talk of 2013 Evelyn Reilly describes the notion of 'ecopoetics' as 'not a genre or a movement', but simply recognising the inevitable 'fact of writing in a world of accelerated environmental change'.⁴

All new poetry is going to be 'environmental' in some way or other, simply because things just cannot be read in the old ways. Certain once familiar kinds of poem no longer seem possible. Take the much quoted 'The Peace of Wild Things' by Wendell Berry:

When despair for the world grows in me
and I wake in the night at the least sound
in fear of what my life and my children's lives may be,
I go and lie down where the wood drake
rests in his beauty on the water, and the great heron feeds.
I come into the peace of wild things
who do not tax their lives with forethought
of grief. I come into the presence of still water.
And I feel above me the day-blind stars
waiting with their light. For a time
I rest in the grace of the world, and am free.⁵

Berry's poem is an example of the kind of work many people no longer find credible, with its high Romantic conception of the 'natural' as a realm of self-evident value, and of the poem as itself a space of access to a redemptive natural space in which the reader participates in some broader realm of shared, non-individual life.

Early ecocriticism in the late 1980s and early 1990s was dominated by a Romantic-humanism which celebrated certain literary texts, especially poetry and environmentalist nonfiction, as appealing to some supposedly more 'natural' or emotive/spiritual part of human identity, seen as usually suppressed by the alleged effects of urban life, industrialisation, abstraction, instrumentalist rationality, etc.⁶ In this way, ecocritical readings themselves seemed presentable as a kind of personal therapy, a retrieval of human possibility in supposed kinship with nature, as in Jonathan Bate's aim: 'to see what happens when we regard poems as imaginary parks in which we may breathe an air that is not toxic and accommodate ourselves to a mode of dwelling that is not alienated'.⁷ Such arguments proved vulnerable to critiques such as Dana Phillips's: 'To suggest that the nature

depicted in a literary text – any literary text whatsoever, no matter how “environmental” its imagination – can be something substantial, is at odds with the fact that ideology, fantasy, and allegory are basic to literature.⁸

It will no longer be possible, in an ‘Anthropocene’ context, to deploy without qualification images of the natural world as some sort of space untouched by the human. The ‘natural’ cannot retain the redemptive force it once had in so many images of unspoilt nature or pastoral retreat, things that were, in any case, arguably already matters of cultural political fantasy, as in the Housman lyric quoted earlier. Matthew Griffiths, in a study of poetry and climate change, argues ‘poetry is more successful when it works against the assimilation of climate change into traditions of nature poetry and recognizes the value of Modernist artifice and uncertainty of identity’.⁹ Griffiths criticises the intellectual tameness of much recent poetry written explicitly on the topic of global warming. These tend to be lyric poems, in a first-person voice, which may well express a powerful sense of protest and loss but yet do little to challenge inherited Romantic assumptions that pit human affairs against a would-be sacralised ‘nature’. Somewhat cliché images of melting ice, polar bears and parched earth may be working to protest a loss of the unspoilt ‘natural’, but only in terms of a broader conception of ‘nature’ that was already problematic in the first place (‘the climate may be changing but, fundamentally speaking, our outlook is not’ (155)).

Nevertheless, the true complexity of environmental issues has been perhaps easier to represent in new or revised forms of poetic practice than in prose forms like the novel, short story or the non-fiction essay, or in theatre. One advantage of poetry is that its removal from the conventional constraints of prose narrative renders it more open to representing multiplicity, and even contradiction and indeterminacy, and to do so without its readers necessarily feeling the lack of some clear storyline. The dominance in poetry of versatile and often plural kinds of metaphor and other kinds of figurative language further removes it from the constraints of narrative linearity felt in most kinds of prose. Susanna Lidström and Greg Garrard single out

the potential of poetry in relation to the crisis of representation and scale entailed by the Anthropocene:

While all narrative genres are capable of complexity, some struggle to represent environmental problems that challenge human imaginations and include vast and complex temporal and geographical scales far beyond the immediate experience or lifetime of a single individual, for example the difficulties of representing climate change in the form of the novel. Poems depend on unique formal qualities, and are perhaps even more than other literary genres animated by and able to contain open-ended, multiple and even contradictory levels of meaning.¹⁰

One ecocritic who has taken up the issue of the supposed 'naturalness' or otherwise of modes of poetic language is Scott Knickerbocker. Knickerbocker's *Ecopoetics: The Language of Nature, Nature of Language* (2012)¹¹ takes up the question of how far poetic language could provide some kind of access to the real on its own terms. 'Can language transparently offer us "reality"? Should it? What is "realistic"?' (8).

Knickerbocker considers mainly a small range of twentieth-century US poets in the post-Romantic modernist tradition (Wallace Stevens, Elizabeth Bishop, Richard Wilbur and Sylvia Plath) to show how each demonstrates an 'intense interest in the natural world' but also to 'resist strict realism and foreground the figurative nature of ecocentrism' (9).

By 'the figurative nature of ecocentrism' (9) is meant a poetic language that highlights its own artifice. This reminds us that our perception and understandings of the non-human is always mediated, constrained by the finitude of our own nature and its particular, necessarily anthropocentric take on reality ('close' or 'soon', for instance, would mean very different things to a creature with a much smaller body, or longer lifespan). From the viewpoint of environmental ethics, a sense of artifice is more responsible than a poetry that imagines itself to be offering direct unmediated access to things.

The artistic challenge is also an ethical one, especially when it comes to representing a non-human animal. Knickerbocker's study stands out for its patient attention to diction, syntax and form. This patient work is necessarily foreshortened in summary, but a brief example is his reading of Emily Dickinson's 'A Bird, came down the Walk' (10–13):

A Bird, came down the Walk -
 He did not know I saw -
 He bit an Angle Worm in halves
 And ate the fellow, raw,

 And then, he drank a Dew
 From a convenient Grass -
 And then hopped sidewise to the Wall
 To let a Beetle pass -

 He glanced with rapid eyes,
 That hurried all abroad -
 They looked like frightened Beads, I thought,
 He stirred his Velvet Head. -

 Like one in danger, Cautious,
 I offered him a Crumb,
 And he unrolled his feathers,
 And rowed him softer Home -

 Than Oars divide the Ocean,
 Too silver for a seam,
 Or Butterflies, off Banks of Noon,
 Leap, plashless as they swim.

The first two thirds of the poem seem to depict an approach between the human speaker and the bird. The metaphors even domesticate the creature somewhat – eyes like 'beads,' a head of 'velvet', as the speaker offers the bird a crumb. Yet this seeming familiarity is broken off as illusory. The bird flies off and, as Dickinson's language becomes

more and more extravagant, the poem's metaphors come increasingly to emphasise the non-human distance of the bird. Knickerbocker writes:

First, rowboat imagery describes his homeward flight, and then the last stanza takes us into an ocean and its swimming butterflies in a metamorphosis of metaphor. This movement at the level of figure suggests both the actual motion of the receding bird as well as the shift to the speaker's epistemological relationship to the bird from near-communion to unknowing. Furthermore, the incongruous pairing of figures, 'ocean' with 'seam', 'Banks' (place) with 'Noon' (time), and 'butterflies' with 'swim' – helps confound her earlier efforts to domesticate the bird. (12)

The extravagance of the language – and the further the bird flies the more extreme it becomes – instantiates Knickerbocker's general argument that 'it is the space *between* the human and the non-human where poetry occurs' (12, emphasis added). To highlight the human artifice of the poem serves an ethic of respect for a non-human other. Second, the way the language itself becomes 'wilder' exemplifies what Knickerbocker calls a 'sensuous poesis' in which 'poems enact through formal devices such as sound effects the speaker's experience of the complexity, mystery, and beauty of nature' (13).

To put this in terms of the discussion of the Anthropocene in the last chapter, one could say that poetry becomes here an art of the human limit or border. Language and thought become defamiliarised precisely as they move towards experiences beyond the human scales and norms which they usually express.

THE POSSIBILITY OF A MORE BIOCENTRIC POETRY

Lidström and Garrard distinguish two sorts of environmental poetry of value. Their topic is work of the past hundred years or so, and

serves to highlight what 'ecopoetry' may mean largely prior to work engaging directly the disruptive questions of scale and representation associated with notions of an Anthropocene. The first sort they term 'ecophenomenological poetry'. This is used to name texts that aim to evoke or celebrate the non-human, be it a landscape, plant or animal, in ways that do justice to its remoteness from anthropocentric conceptions or from human social meanings.

'Ecophenomenological poetry' is exemplified by the kind of non-anthropocentric nature poetry associated with Ted Hughes and Robinson Jeffers. Dickinson's 'A bird, came down the Walk' could be another example. These poems engage with non-human creatures, places and organisms in order to affirm them in terms other to human preconceptions. In Hughes's famous poem, 'Hawk Roosting', a less anthropocentric view is produced by projecting the hawk as the speaker of the poem. Whereas Dickinson stressed the otherness of a non-human creature by highlighting how deeply we use human categories to think them, Hughes achieves a comparable affect by having the bird express values that, in human terms, would be outrageous or insane:

Now I hold Creation in my foot
Or fly up, and revolve it all slowly –
I kill where I please because it is all mine.¹²

One ideal implicit in such work, impossible to achieve, would be a representation of a thoroughly non-human perception of the world. The impossibility of this is soon apparent, for the further a poem like 'Hawk Roosting' slips into the past, the less 'non-human' it seems and the more it reads as what it was, part of European culture of the 1950s. Hughes was affirming non-humans in terms of values that are assuredly part of a very human tradition of Romantic primitivism: the idealisation of a non-human creature in terms of 'vitality', spontaneity, rootedness, the lack of a supposedly alienating 'self-consciousness', and so on.¹³

In contrast to such would-be biocentric poetry, Lidström and Garrard highlight what they term 'environmental poetry', though in practice these types may often overlap, even in the same text. Environmental poetry 'tries to grapple with the changing relationship between human societies and natural environments' (37). Its distinctive feature is that attention to the non-human environment is never separate from an attendant sense of human history or culture. The work of Seamus Heaney is a leading example, being very much a poetry of human places and environments, and of especially of a long Irish history. For instance, to take yet another poem focused upon a bird, 'The Backward Look' concerns the place, nature and name of the snipe, a species of wading bird, and traces the different cultural connotations of this same creature as perceived by the various peoples that have occupied, or fought over, the same area.

The Backward Look

A stagger in air
as if a language
failed, a sleight
of wing.

A snipe's bleat is fleeing
its nesting ground
into dialect,
into variants,

transliterations whirr
on the nature reserves –
little goat of the air,
of the evening,

little goat of the frost.

It is his tail-feathers
drumming elegies

[...] ¹⁴

The snipe, as a bird now largely of 'nature reserves', evokes in its very name realms of history and refuge. The English word 'snipe' has a Nordic or Viking source, not an Irish one, and it already enacts a process of displacement and loss, as memorialised in Heaney's translation into his poem's English of Irish/Gaelic folk terms for the bird, 'little goat of the air', 'little goat of the frost'. Heaney's poetry enacts the layers of dispute in the inherited names and associations of natural creatures and places (44–5), especially in a place like Northern Ireland, marked by its long colonial history of Scottish, English and earlier Viking settlement. The tail feathers of the snipe, which make a distinctive whirring noise in the air, are 'drumming elegies': the backward look at history entails a sense of both human and non-human costs. Later in the poem 'snipe' becomes 'sniper', a clear reference to the sectarian violence in Ulster at this time.

Another example of what Lidström and Garrard call 'environmental poetry' is provided by the renowned Caribbean poet, Edward Kamau Brathwaite. His work's long-standing concern with forms of cultural dislocation in the Caribbean took a more 'ecological' mode at the turn of the twenty-first century. When living on the small parcel of land, which he named 'CowPastor', on his native Barbados, Brathwaite found himself engulfed in a dispute over plans to seize the land for a road to the nearby airport. Brathwaite believed the place to be a sacred site, used once for the burial of slaves. The road (later built, sadly) formed an act of environmental violence he did not hesitate to link back to the originary Barbadian trauma of the Middle Passage and slavery.¹⁵

This environmental issue, and the intensified sense it produced of the plants and life of CowPastor, feeds into the formal and technical innovations of what Brathwaite calls his 'Sycorax video style', a poetic experiment first suggested by the possibilities of the screen space on his late wife's computer.¹⁶ This style of presentation rejuvenates the staid face of the printed word by deploying variations in font size and appearance (bold, italic, etc.); it also substitutes one punctuation mark for another in unconventional places, uses variable

margins, and local 'nation language'. The poem 'Namsetoura' centres on a furious diatribe of the eponymous spider trickster/ancestral spirit whom Brathwaite believed he had encountered at CowPastor. She denounces the poet, her descendant, for disturbing her, for his use of merely standard English, his appropriating the place by photographing it like some tourist, and for not adequately defending it:

*Tree hundred years uh starin here under dis spider
web @ bush.ananse at my door of herbs. an now yu come
disturb
me wit yr camera destroy th ruin of my spiral
with yr flash ...
Yu tink they dispossessin yu? Yu tink you tall? you tink yu
mmassaccourraamann+rasta. boanurga? reckon yu rave?
...
But look yu doa nuh! Look wha be. come-a yu!*

(The text appears originally in an early computer dot matrix typeface that will not show in quotation here.) A massacouramann is mythical manlike creature believed to attack boats and their occupants in Guyanan rivers;¹⁷ a boanerges is a vociferous preacher (*Bible*, Mark 3:17. 2).

Brathwaite's 'Sycorax' refers to the uncolonisable Sycorax, mother of the subjected Caliban in Shakespeare's *The Tempest*, and a figure used in Brathwaite to name the submerged African culture of the West Indies. Discussing the computer-based Sycorax style, Brathwaite asserts that 'it is not really technology ... but an increasing link between myself and ecology, not technology'. The multiple typefaces, and strange use of punctuation and spacing opens up the page/screen as a more plurally expressive site. It is a countervoice to those regimented forces through which 'the entire island is being overrun by building ... there's hardly any grass left'.¹⁸

Lidström and Garrard's attention to Heaney exemplifies a general trend in ecocritical readings of poetry to focus on specific

places, their complex layers of human and non-human significance and history. Tom Bristow, Sam Solnick, Ben Smith and others all offer surveys of modern anglophone poets of place: John Burnside in Scotland, John Kinsella in Western Australia, Alice Oswald in south-west England.¹⁹ Alice Oswald's long poem 'Dart' (2002)²⁰ stands out as a recent text in which a less anthropocentric sense of reality is projected by formal techniques that refuse the domination of the text by one linear narrative or point of view. Various voices of people and spirits associated with the life of the river Dart in south-west England – a walker, a naturalist, a woodsman, a fisherman and bailiff, a water nymph, a dairy worker – give way one to another in kind of flowing collage technique, expressing the multiple identity of people and river in various contexts, places, times of day and timescales.

Ecopoetry of the experimental kind usually continues and develops the formal technique of traditions of Modernism, such as that associated with the twentieth-century US poet William Carlos Williams and the 'objectivism' of Charles Olson, and other forms of the open free verse poetic associated with modernists such as Ezra Pound and T. S. Eliot. Griffiths's *The New Poetics of Climate Change* celebrates the suitability of poetic techniques pioneered in modernist verse for engagement with the complexities of representing climate change, in the work of poets such as Jorie Graham, Sean Borodale and Peter Reading. The tendency is to exploit the expressive resources of 'open' verse forms, without the development of regular patterns or the closure of overly themed structures. An intensified sense of the inter-implication of 'nature' and 'culture' and of the dislocations between local and global scales, also enables revisionist readings of earlier, canonical modernist poetry, which now appears re-clarified, exercised in its own way with analogous questions and challenges, as Griffiths demonstrates in new readings of T. S. Eliot's 'The Waste Land', the work of Wallace Stevens, David Jones, Basil Bunting and others.

Jonathan Skinner theorises a specific, possible genre of 'ecopoetry' that also looks to Modernism, specifically to an aesthetic of collage, allusion and multiple association, stressing the place of contingency in what the reader receives as the poem. Skinner calls for

a provocative reworking of poetics in the context of a world in which it must probably be acknowledged, with Stephen Meyer, that 'the battle for the biodiversity of the current geological period is lost'.²¹ Nevertheless, one space for poetry is to be an affirmative dwelling in what Skinner terms the 'third landscape', the wastelands on the edge of cities, neglected areas of water, overgrown fields, grubbed up orchards, a 'wildness' that has 'the status of grass growing up through cracks in the sidewalk' (25). The poem becomes a space in which the non-human world can loosen itself from the weight of human perceptions. In the tradition of Wordsworth and Williams, it is also a celebration of the everyday, for 'The wild might be right under our noses: more likely there, than in designated "wilderness areas"' (32). This is the conception of a poem less as a tool of individual expression than a space with its own dynamic, with 'sound, image and idea, and somehow letting the words be' (13), a space for the vitality of linguistic resonances and contingent associations. Clearly influenced by ideas associated with the so-called L=A=N=G=U=A=G=E school of poetry from the 1970s onwards, Skinner coins the term 'entropology' to name a practice that poises itself between a poetic crafting of language and the effects of chance meaning and association (the entropy in 'entropology'). For Skinner, this places the writer and reader in the midst of effects and possibilities they did not originate or foresee. 'Rather than the First landscapes of pastoral fantasy, this landscape of weeds seems an appropriate site for the entropology of a poetics radically, and rhizomatically, open to the flowers of contingency' (34). To set up a text that invites and generates new effects by the possible interconnections between its components is a technique that moves towards a displacement of anthropocentric modes of reading, enabling modes of meaning-generation that result from unforeseen links and possible resonances that must exceed any one human stance. Skinner refers briefly to Brathwaite's 'Namsetoura' and its Sycorax video style (48).

Skinner's essay still remains, however, within the dubious tradition of fantasising that the language of poetry is in some way or another more 'natural' or redemptively 'organic' than other forms of language, the fallacy that Timothy Morton calls 'eco-mimesis' and

which we have already seen questioned in Knickerbocker's reading of Dickinson.²² Skinner claims that a defamiliarising use of language, its refusal to simply disappear in some immediately grasped sense or meaning, will enable a visceral, bodily sense of language as a material medium.²³ This then becomes the rather forced argument that 'to carry out the instructions fixed on the page is a transformative way of discovering one's objective nature: as the breath, the tongue and lips ... undergo "kinship with animals"' (43). Whereas Dickinson's poem affirmed a sense of respect and wonder for a bird through an art of stressing its lack of commonalty with the human poet and her modes of thought and language, Skinner's ecopoetry is imagined to be some sort of initiation into our own bodily/'animal' nature²⁴ – very unconvincingly; after all, suddenly tripping in the street does the same thing, or a cold shower.

AN 'ANTHROPOCENE POETRY'?

Skinner's 'entropology', whatever its merits, exemplifies the way in which from the mid-1990s the term 'ecopoetry' has also come to name a self-conscious if very loose school of poetic experimentation in anglophone cultures, grappling with what we would now term the 'Anthropocene' in some sense. Contemporary ecopoetry becomes the stage for variously wrought contests between innovation and anachronism. The founding of the journal *ecopoetics* by Skinner in 2001 is one marker here.

A crucial context for new poetic work is the way an awareness of issues informing a notion of the 'Anthropocene' already has an oddly 'poetic' effect for anyone with some kind of environmental literacy, whether engaged with poetry or not. A proliferation of surplus and supplementary meanings and hidden associations now evoke or link to disparate things – an expensive car and an eroding coastline, a mass-produced apple and a meadow weirdly silent in high summer. While it is common to talk of the environmental crisis in terms of a disenchantment of the natural world, a grim kind of *re-enchantment* is at work here. It is a matter of a hidden violence to be registered

somehow even in the trivial things of a modern Western house: a patio heater or a car is not just an object, nor mere commodity, it is a kind of action-at-distance, a quiet 'go to hell' addressed to the future.

Evelyn Reilly's *Styrofoam* (2009)²⁵ is based, crudely enough, on exploiting the shock effect of such disenchantments. Its focus is on Styrofoam, the most trivial kind of urban waste, yet destined to decay only over a timescale that baffles human finitude. Nine extended poems (along with the visual images inserted within and between them) challenge readers to confront the perhaps unfathomable reality of thermoplastics, which may outlast the species that so casually used them and are already affecting the biosphere in ways people have hardly begun to comprehend. Reilly appears to have anticipated Morton's argument of 2013 on 'hyperobjects', entities, that is, which encompass scalar dimensions that exceed our capacity to think beyond their local or partial manifestations. Reilly writes:

Answer: It is a misconception that materials
biodegrade in a meaningful timeframe

Answer: Thought to be composters landfills
are actually vast mummifiers
of waste ... (10)

Correspondingly, Reilly's muse figure is no archaic Greek divinity, but she is both dead and dressed in synthetic clothes, plastics whose names and contents are listed:

little dead Greek lady
in your eternity.saddle

[hat: 59% Acrylic 41% Modacrylic]
[ornamental trim: 24% Polyvinyl 76% Polyamide] (9)

So while the lady may be dead, the plastics she wears are set to last into an unimaginably long future.

The 'hyperobject' aspect of the Anthropocene finds a subtler response in poems that dramatise or engage a sense of disproportion or discordance in our basic perception of things. Laurel Peacock has demonstrated how Brenda Hillman's poetry uses the affliction of 'Seasonal Affective Disorder' (SAD) as a source of poetic defamiliarisation and environmentally inflected tropes.²⁶ In contrast with the kinds of contemplative stance of much nature poetry, the human body becomes itself a kind of threshold object, a natural/cultural hybrid able to register the dislocations and derangements of this fluid boundary. The late Adrienne Rich similarly used the pain of her arthritis as a tool for conceptualising various modes of pain and damage in the world.²⁷

Hillman's poetry dislocates given attributes and dimensions between the human and non-human. It uses deliberately incongruous forms of personification for example, with discordant tonal or emotional effects. Here is the elusive opening of 'El Niño Orgonon':

Using cosmic magic and destruction equally
the ocean has decided to rearrange
its syntax so that the jet stream
shifts north; its waves warm [...]²⁸

Peacock sees such dislocations of language as particularly germane to an Anthropocene context:

In highlighting how we are made up of and surrounded by the elements, Hillman creates a poetics of environment that demonstrates an openness to being affected by (often depressed by) the environment, rather than deploying its elements in the service of a transcendent meaning. Poetry is a medium that heightens the openness of language to things and to environment, as well as the ability of language to affect and to be affected by its elements. (88)

This last claim is not quite as novel as it presents itself to be. After all, millennia of inherited poetry across all cultures of the world already demonstrate and exploit what Peacock terms 'the openness of language to things and to environment'. The mid-twentieth-century work of phenomenologists like Gaston Bachelard,²⁹ and, more recently, Gernot Böhme³⁰ anticipated this kind of ecopoetic by decades. They argued that effects of attraction or repulsion which we feel in relation to material or natural things or places are not a projection, or a 'pathetic fallacy', but a matter of real presences registered by the human body as itself a material part of nature.³¹

What genuinely differentiates ecopoetry from this long line of practice and argument is its attention to modes of bodily derangement and forms of illness that break down illusions of any comfortable correlation between human mood and object world. In Hillman's work, a conventionally 'sad' image of falling rain, for instance, would not be so tidily readable in relation to human grief. Rather the now slightly contaminated or acid rain itself projects the complex, subtle or unacknowledged layers of guilt, or the unwitting complicity of the poetic 'I' or the reader with environmental degradation. Hillman conveys a sense of human contamination in the opacity of hybrid environments, as in 'Dioxin Sunset':

There was a hurt that lay between two colors,
A shade not resolved in the mind
because it is the mind³²

Another feature of this Anthropocene poetry – to coin a phrase – is its disallowing of the stance of the poet as a detached, immaterial or innocent spectator, or as moralising judge. Margaret Ronda writes of contemporary poetry of this kind (Reilly, Hillman) that:

This sense of an unbearable responsibility that somehow must be borne is central to the psychic operations of these poems, to their forms of defacement, and to the destructive potential they

evoke. Indeed, the speakers of these poems are 'invented' by this unintentional yet inescapable agency, made to carry its impossible weight.³³

Sam Solnick observes a similar dynamic in the poetry of Derek Mahon, the sense of false-consciousness that must affect a poetry engaged in consciousness-raising about climate change, i.e. the dangers of hypocrisy and self-righteousness in a context in which some irony about one's own stance and life seem inevitable.³⁴

One of the most powerful 'ecopoems' to date must be Juliana Spahr's 'Unnamed Dragonfly Series' (2011).³⁵ The poem was written originally to be read at an art exhibition and, in Dianne Chisholm's words, it 'parodies the convention of framing nature (insects, birds, landscapes) in drawings at an exhibition'.³⁶

The poem consists of eleven sections all constructed in the same way: single unadorned sentences or clauses follow each other, with the name of a plant or animal species appearing in bold type between them, including the unnamed dragonfly species of the title. The text opens:

The city of Rotterdam sent over daffodils. **A Noctuid Moth** The daffodils bloomed in the first weeks of April. **Allegheny Woodrat** They were everywhere. **American Bittern** They were yellow. **American Burying Beetle** It was April and then the temperature was 90 degrees and all the daffodils died immediately. **Arogos Skipper** All at the same time. **Atlantic Hawksbill Sea Turtle** This happened right where they were living. **Atlantic Ridley Sea Turtle** It was early April. **Bald Eagle**. (75)

The 'they' of 'where they were living' are the inhabitants of a small town in Wisconsin. 'They' form a kind of collective and vaguely average suburban consciousness, becoming increasingly aware of ecological and global contexts (as in the sense of mild surprise inherent in the repetition 'It was April ...'; 'It was early April' yet 90

degrees Fahrenheit). The death of the daffodils sent from Rotterdam initiates a poetic sequence that makes up a kind of contemporary 'rondo', a form in which a principal theme repeats itself in differing contexts. The simple grammatical structure of individual sentences, blocked off by species names, has the effect that every sentence is a kind of variant of the others. The result ('They ... They ... They') can be a sense both of intensification, and of *déjà vu*, even of deadening monotony and entrapment – a peculiar, conflictual 'Anthropocene' blend of the kind Robert Macfarlane might wish to coin a name for. The poem has a minimal sense of narrative in tracing this changing awareness, anxiety and denial in relation to the reality of climate change, a complex of contradictory emotions.

Green Floater. Some of them worked at an anarchist bookstore.

Green Sea Turtle. Some of them had tans that summer that they got from walking around outside because they needed to be outside walking around in order to think how best to be somewhat content in this life right now. **Grizzled Skipper.** Some of them drove cabs.

Harbor Porpoise.

Chisholm sums up some aspects of how Spahr deploys the device of the refrain. Whereas a refrain normally appears at the end of each stanza in a poem, or is repeated with regular intervals, 'Spahr's refrain stresses repetition at irregular intervals and with an uncanny (Poe-like) variation of wording that deranges meaning with each recurrence.' This repetition with a difference each time 'makes thinkable hitherto unthought connections between figures and ideas' (636), as well as between different spatial and ecological scales:

A connection between the heat wave at home and the planet's melting glaciers starts to dawn on 'they', who become increasingly affected with each refrain. In the second refrain, the internet helps frame their sense that the world is experiencing a natural and cultural meltdown.

Chisholm claims that the entire poem be seen as a refrain, or a block of small and large refrains, with effects of semantic interference and discordance, a 'lyric derangement' (636).

In sum, the simple sentences and structure of 'Unknown Dragonfly Species' show how carefully judged formal inventiveness alone can give a new poem simple force while making strong environmental points.

SOME QUESTIONS

A danger for an 'ecological' poetry, with its agenda of expressing multiple and often counterintuitive relationships (to 'juxtapose kelp beds with junkyards' (Marcella Durand))³⁷ may be the risk of seeming arbitrary and formless. After all, the 'environment' is, ultimately, *everything*, and it becomes a merely empty exercise to connect everything with everything else. Currently, ecopoetry of the kind celebrated by Reilly and Hillman tends to allow a *certain* experience of formlessness to assert itself, stressing often hidden links of pollution or complicity. The risk is that this may produce texts straining the boundaries of accessibility, relevance and even readability. An objection made by Tony Hoagland to Hillman's work is that 'for all the best ideological motives, the poems are often as cryptic as algebraic equations'.³⁸ Such obscurity must be worrying for any ambition that ecopoetry can be a significant kind of environmental activism, given that even classes on traditional poetry can already too easily become a kind of crossword puzzle-solving exercise.

Styrofoam is also an example of how such contemporary ecopoetry of this kind shows a profound and underacknowledged 'academisation' of poetic practice. Self-conscious ecopoetry may seem valued less for its transmissibility, or any musical quality but more as a form of condensed or cryptic intellectual analysis in action, already ripe to become the object of some appreciative seminar. Reilly's *Styrofoam* is essentially an academic essay that uses innovations in punctuation, allusion and modernist collage techniques to express some fairly well-known arguments in environmental studies. This

is a long way from poetry as a popular art form recitable in public places or to friends, or read by or with children, like, say Benjamin Zephaniah's witty collection, *The Little Book of Vegan Poems* (2000).³⁹

Ecopoetics raises but does not resolve some questions about the nature of the aesthetic and poetic pleasure. The implicit issue here is how far the basic expectation that a poem will yield aesthetic pleasure is fully compatible with registering the chastening, post-human dislocations of what might be termed an Anthropocene sensibility. Skinner denounces 'transparent narratives of self-discovery, or solipsistic, self-expressive displays' as 'ill-suited to the current crisis', as opposed to a poetry 'alive to the differentiating nature of its own materials'.⁴⁰ Skinner's preferences could be borne out in Solnick's reading of the formal modes of Jeremy Prynne's difficult poem 'Along the Wall', which is loosely on the disastrous consequences of the production of biofuels (corn that was once made for eating is now used to drive cars, and poorer people are deprived of food):

In Prynne's poem the density of the language and the ways it slips between multiple referents and contexts reflects the fact that there is no 'superordinate authority' here; no individual or social system has final control over how the ecological issues are communicated and the consequences of that communication.⁴¹

This may be a strong point about social and ecological realities and illusions of overall governance, but a question arises: how often do readers of poetry wish to be subjected to a linguistic space that enacts lack of control, limited ability to comprehend, personal guilt and complicity, and a sense of the helpless? Are other aesthetic techniques that enable a sense of harmony and moderate cognitive control simply illusory?

It may be better simply to see ecopoetry, in this post-1990 school, as, in effect, a practical branch of academic ecocriticism, rather than bemoaning how eclectic it is or too often lacking in any kind of sizable readership outside universities. It forms a kind

of avant garde, pioneering new modes of thought and expression adequate to the changing contexts in which we live, and exploring modes of poetry that are not anachronistic. It sustains the traditional political and social hope of the avant garde, that its innovation and modes of thought will finally have effect more broadly in society at large. Yet, compared to the *Lyrical Ballads* of 1798 or the French surrealists of the 1920s, that broader function has passed, for better or worse, to the largely academic context in which this poetry is produced and discussed. The most forceful ecopoetry would surely be one that managed to retain great accessibility and clarity while at the same time being formally and technically inventive. Juliana Spahr's 'An unknown dragonfly species' stands out in this respect.

4 The Challenge for Prose Narrative

Ecocriticism has become a leading forum for thought on the nature and limits of the novel as a literary form. Issues gathered under various concepts of an Anthropocene have raised fundamental questions, such as the nature and limits of narrative *per se*; the nature of realism; the philosophical, cultural and political presuppositions governing conventions of characterisation; cultural assumptions about what makes something a 'serious' or 'literary' work as opposed to kinds of 'mere' genre fiction (science fiction, the fantastic, etc.); and the erosion of meaningful distinctions between the modern Western novel and postcolonial fictions.

The novel has long seemed especially suited to the way environmental issues are always and immediately also issues of politics and culture. A novel in particular has the power to be comprehensive in the way that, say, a paper in a scientific or social science journal never could be: for it is free to trace all imaginable scenarios and to survey how prejudice, personal background, cultural assumptions, scientific research and the complacencies of day-to-day life *all* form part of how people engage or evade environmental questions. Naomi Oreskes is a member of the Anthropocene Working Group, and signatory to its scientific work. Her unrestricted thought on its implications, however, takes the form of a dystopian novel, *The Collapse of Western Civilization*, co-written with Erik Conway, a work of speculative realism in which a future historian is depicted looking back on a story of collapse from near our own time.

This is the idea of literature as public witness, and, often, as the making relevant or translation of scientific data and abstractions into sensuous representation and personal narratives. Barbara Kingsolver's *Flight Behaviour* (2012)[†] has quickly become one of

the best known 'climate change' ('cli-fi') novels for doing precisely that, dramatising the various facets, emotional, ecological, economic and religious of this creeping disaster through the various mixed and clashing responses to it in one location (impoverished rural Tennessee) of a variety of characters, such as local farmers, visiting scientists and television journalists. The drama is made more pointed by the fact that the climate-related phenomenon Kingsolver imagines is superficially an attractive one, the unusual settling for the winter of a large flock of migratory monarch butterflies in a high wood in the Appalachians, where they may well not survive. Although I have criticised aspects of this novel elsewhere,² its dramatisation of plural responses to this event illustrates how the novel as a form can seem ideally placed to engage the very mixed up nature of the Anthropocene, its blend of fact and value, politics and climatology, emotional denial and habit, the interplay of global and local scales.

Erin James develops an analogous defence of the novel form in her *The Storyworld Accord* (2015).³ She celebrates the power of novels to immerse readers in local environments and modes of perceiving them. Her argument hinges on the way narratives are most 'immersive' when they successfully project the spatial and cultural as felt on the human scale. Distant or foreign contexts become available to a reader on the scale at which we live from day to day. She offers readings of Sam Selvon (on social tensions in Trinidad during the Second World War and the life of Caribbean immigrants in 1950s London); Ken Saro-Wiwa on the oil industry and corruption in the Niger Delta; Ben Okri's work on that same country, and V. S. Naipaul's Indian travelogues.

The stronger our sense of immersion in a narrative, of human empathy with the action and characters, then the more likely it is to enhance our understanding of how others think. James writes:

I argue that narratives are the only texts that can provide us with cognitive and emotional access to people's conception and experiences of their ecological homes. Furthermore, such readings

of texts stand to broaden our understanding of the various ways in which people experience and live in the world. (39)

James is only making explicit an understanding of the value of the novel form widespread in ecocriticism. For instance, Lawrence Buell reads Linda Hogan's *Power* (1998)⁴ through just such an aesthetic or ethic of personal identification. In this Native American novel, a sixteen-year-old member of the Taiga Tribe, Omishto, witnesses a woman she calls her 'aunt' kill a Florida panther, an animal considered to be a sacred ancestor, as well as being a legally protected species. The killing is done for obscure but sincere reasons at a time of cultural breakdown for this people – maybe better this deliberate, reverential killing than the usual local extinction due to roads, housing and pollution. 'Aunt' Ama Eaton is taken to a US court for the killing, but finally acquitted for lack of evidence. A native tribunal, however, does convict her and she is banished. Yet Hogan's text presents both these judicial procedures as too crude for the nuances of this specific case. For Buell, this makes Hogan's novel a critique of the formulaic nature of the law as such, as if environmental ethics could have the rigidity of a mere code to be obeyed or transgressed: 'Justice is unachievable because both mainstream and native cultures are entangled in their own protocols.' Neither the colonisers' law nor the old tribal law is adequate to the new environmental context,⁵ and only the kind of immersive truth undergone by the novel's reader is sensitive enough to acknowledge and make understood Ama's felt need to kill the panther. In effect, for Buell the novel form itself is the bearer of modes of tragic recognition and understanding that elude legal and ethical codification.

At the same time, James's very defence of features that make a narrative immediate also, unwittingly, suggests possible limitations and questions when it comes to engaging environmental issues on a global scale, or which may not be visible locally, such as climate change. The global context is now one of variously dangerous environmental tipping points, but in which changes are happening at scales that we do not perceive with ordinary human

faculties, and with a complexity that may escape us, though we cannot escape it. This is a world whose 'unconformities' in a broad material sense may well elude the novel understood as a form which privileges the realm of personal human experience as the basic reality.

This question of the limits of the novelistic and of the 'normal' human scale has become a feature of critical debate in the Anthropocene, variously conceived. James also does not take up the challenge of the most powerful and controversial forms of 'immersive' prose, that in which the attempted viewpoint is that of a non-human animal, as with Virginia Woolf's *Flush: A Biography* (1933) (the name of the pet dog of Elizabeth Barrett Browning)⁶ or Barbara Gowdy's *The White Bone* (2000),⁷ which recreates from 'within' the social, intellectual and spiritual worlds of persecuted African elephants.

Non-human subjectivity and its narrative recreation is now a diverse and fast-growing area of debate in critical animal studies, though it can only be outlined here. The key question is what kinds of worlds do non-human animals possess? And how might non-human subjectivity be justly represented in language? Such inter-species translation forms a challenge for language and semantics every bit as daunting as that Macfarlane poses in suggesting a new vocabulary of the Anthropocene. Gowdy's *The White Bone* for instance, risks translating into human speech a repertoire of elephant vocalisations and signals. In such representations, anthropomorphism becomes a helpful but unstable trope, ascribing as it does to some non-humans the human-equivalent dignity of full consciousness, emotion and even personhood, but doing so at the risk of obliterating the singularity of very different modes of life and communication.⁸ How far does ascribing a linear narrative consciousness to a non-human already anthropomorphise it?

Thomas Van Dooren's *Flight Ways: Life and Loss at the Edge of Extinction* (2014),⁹ is a recent nonfictional contribution to critical animal studies, explicating in depth the specific modes of life ('flight ways') of species of birds on the edge of extinction, such as the Hawaiian crow, or the Laysan and Black-footed albatrosses. In these



IMAGE 4 *Chimp 'smiling'?* Close-up of mixed-breed monkey between chimpanzee and bonobo smiling, 8 years old, Eric Isselee/Shutterstock.com.

exercises, the immersive power of narrative takes us to the very frontiers of modes of life conceivable to a human being, as well as forming a voice of horrified protest against extermination.

THE ANTHROPOCENE AND QUESTIONS OF NARRATIVE

Narrative and narrating are, for human beings, fundamental for making sense of the world and feeling able to act in it. Humans crave to understand things by embedding them in some linear story – it is a kind of 'mental lust' (H. Porter Abbot).¹⁰ Even scientists need to narrate, 'to integrate their observations into origin stories' (Lynn Margulis).¹¹ More problematically, people resort, especially in times

of stress, to narratives ascribing the cause of things to some controlling entity or scapegoat – for example, the economy falters, they blame the government or immigration. Such default modes of narrative explanation are good for political activism and campaigning, but not so good for intelligent analysis.

Is the so-called Anthropocene, with all its complexities, anti-pathetic to narrative as a basic mode of sense making, not something adequately presentable in terms of a linear and coherent chain of directly related events? If so, then this would matter greatly in relation to our ability to comprehend it or make it the concern of imaginative literature.

The narratologist H. Porter Abbot summarises the kinds of phenomena that most resist the human need for some ‘story’ as a form of intellectual explanation:

One is the massive distribution of causal agents such that there is ‘action’ but not a ‘chain of events’. The other is the radical narrative disconnect between local action and the product (the object or arc of change) brought about by emergent behavior.¹²

Abbot’s account would fit easily the almost bewildering multiplicity of factors behind global environmental degradation. At issue are capitalist economics, growing population pressure, tropical deforestation, impoverishment, neo-colonialism, alongside such material factors such as levels of methane from thawing tundra in Siberia, rates of soil degradation in Africa, the varying reflectivity of clouds, as well as environmentally dubious cultural norms, such as those of patriarchy, and anthropocentric fantasies of control and sovereignty. Together, these and other phenomena create an obscure whole of further side effects, alarming and only partially intelligible, as known and unknown non-human agencies interact in badly understood ways with increasingly obtrusive human actions. Environmental degradation may become less a matter of even discernibly plural causes, and more the emergent effect of the combination of numerous interacting issues of a hybrid kind. Along with the difficulty of conceiving issues

on a planetary scale over longer timescales, complexity itself seems set to become an underlying environmental meta-problem.

If all these together are being given the name 'Anthropocene' as a sort of shorthand, then it serves as a paradigmatic example of a so-called *emergent* phenomenon, that is, something not predictable from its antecedent conditions.¹³

It is a matter again of scale and scalar literacy. A supremely important task for modern literature and for criticism becomes for them to find ways of representing this new reality of elusive agencies and distant or invisible wrongs, happening at counter-intuitive scales, and to do so in ways that are engaging, credible and pertinent. A crucial claim of green criticism, after all, has always been that the environmental crisis is a crisis of imagination, that new ways of imagining and conceiving humanity's relation to the natural world are needed, and that literature, art and criticism can be at the vanguard of this.

For novels that engage issues on a global scale, such as climate change, this means finding answers to a well-known argument by Dominic Head as to why the novel as a form may be inadequate for much environmental work. In Roman Bartosch's words: 'Character, person, and narrative consciousness, all of which Head cites as the said basic foci of fictional writing, may not be adequate means of dealing with the larger-than-individual process of evolution, or the vastness of the biotic community.'¹⁴

A novel which takes up these challenges is T. C. Boyle's *A Friend of the Earth* (2000).¹⁵ Boyle's narrative strategy is to offer two, alternating storylines focused on an environmental activist called Ty Tierwater, with scenes from his life as a young man (narrated in the third person) and as an old man (in the first person), in narratives set in 1989–93 and in the 2020s, respectively. This double time frame, dramatising very different environmental contexts, also helps foreground distinctions between the demands being placed on earlier, first generation and on contemporary ecocriticism, for the later context is that of a world ecology ruined by climate change.

In the 1980s Tierwater is a committed member of EF ('Earth Forever'), a fictional version of the pseudo-anarchist group Earth First!,

with its programme of 'direct action' and the 'monkey wrenching' of Abbey's seminal *The Monkey Wrench Gang*. The reader follows the drama and bravery of eco-saboteurs working to save indigenous forests from logging. Boyle does not simplify the issues: sympathy is shown for those who need to support themselves by working for forestry companies, or who depend indirectly on the incomes they generate. Tierwater's old companions included one Alice Wind, a woman who embarrasses him by conforming too closely to the tree-hugging stereotype with her vacuous green rhetoric. The reactions in the 1980s narrative to Tierwater's activities from normal people, such as police officers and local forest and retail workers, are precisely those heard again and again in environmental controversies ('but it's about jobs', 'these activists would damage the economy', etc.).

The gap between the two narratives is the technique by which Boyle makes legible the issue of that encompassing context many would now call the 'Anthropocene' – an obscure hybrid monster composed of capricious shifts in the working of the Earth system, interacting with the impacts of vast human populations and rampant capitalism ('the whole world's a comic strip now' (2)). At the same time, as we shall see, Boyle's use of a two-narrative technique has its own elements of evasion and simplification. In 2025 (world population eleven and a half billion (15)), Tierwater is a bitter old man, the veteran of several prison terms. Everywhere houses are ruined, windows bricked up to protect against the storms, etc. The effect of the gap between the alternating narratives is to highlight the discrepancy between old-fashioned local environment activisms, even the most extreme monkey-wrenching kind, and the overwhelmingly global scale of the issue. In 2025, one huge storm can destroy forests Tierwater once strove to save piecemeal. Tierwater's job is now to look after a few remaining species of charismatic large animals preserved in the grounds of a rich rock star.

The contrast between the two narrative times seems both to justify the younger Tierwater's acts of sabotaging Caterpillar trucks and road-blocking, and yet to make them appear almost farcically insignificant. It shows, in Adam Trexler's words, how difficult it is to oppose climate change, with no visible human protagonist to fight

against – where do you go to confront it in some way that doesn't immediately become more gesture than effective action?¹⁶

Tierwater's is a recognisably American form of environmental protest, looking to a tradition of civil disobedience articulated by Henry D. Thoreau and with an intensely individualist ethic that echoes the eighteenth-century political philosophy of Thomas Jefferson's Declaration of Independence:

Maybe he was thinking of Thoreau, his hero of the moment (along with Messrs. [John] Muir, [Aldo] Leopold and Abbey): *The authority of government can have no pure right over my person and property but what I concede to it.* Yes. Sure. Sure, he was. (49)

The audience for such a protest is, superficially, the loggers and logging companies, but it is more truly the public who follow the news on television or who read newspapers and who in the end, it is supposed, constitute that element of public opinion from which governments arise and which alone grants them legitimacy. This is also, of course, the basic faith of ecocriticism, that intellectual advocacy of the environment can so alter the 'cultural imaginary' as to have real, political consequences. Hence, some of Tierwater's demonstrations are clearly publicity stunts for a cause, as when Tierwater and his partner Andrea spend a month naked in the forest living only on food they can procure there for themselves, or Tierwater's daughter Sierra's protest vigil at the top of a tree.

Boyle's novel is particularly interesting because it juxtaposes a world ravaged by global warming with the kinds of local environmental actions and arguments that were the context and overriding concern of ecocriticism as it emerged in the 1990s. The effect is paradoxical and perplexing. In the earlier narrative, there are clear objectives and issues, saving the old growth forest and its species, and also clear antagonists, the bosses of logging companies and the government that supports them. While waiting for help to release him from the increasingly painful concrete in which he has set his feet to block a logging road, Tierwater tries to read Bill McKibben's classic *The*

End of Nature, published that year, 1989 (33).¹⁷ The protest demo also embodies a residual faith in democratic institutions and the power of public opinion, the faith that theatrical kinds of protest can appeal to the thinking of sufficient numbers of people to affect government and business. But 'if a protest falls in the woods and there's no one there to hear it, does it make a sound?' (35) and, in fact, the protest is effectively wasted since 'there wasn't a single reporter on hand to bear witness' (35).

In the later narrative, on the other hand, there is no environmental activism beyond protecting animals from a devastating storm. There is no forest to be 'saved' or visible human antagonist to engage:

But what has changed, and no amount of footage on the nightly news could have prepared us for it, is the forest. It's gone. Or not gone, exactly, but fallen – all of it, trees atop tree, trees bent at the elbows, snapped at the base, uprooted and flung a hundred yards by the violence of the winds. (266)

The physical, social and institutional context that gave meaning to the older forms of environmental protest are all obsolete or absent. The institutionalised environmentalism once tried by Andrea (in a public pressure group complete with glossy publications and merchandise) is also irrelevant. The double-narrative technique instantiates, without resolution, the dislocations of scale that characterise environmental thought and action in the Anthropocene. Boyle achieves this without any deviation from the conventions of classic realism in narrative or characterisation.

Boyle's technique enacts a kind of post-human shift, with the sense of individual agents as in fact the puppets of a situation or context they did not fully grasp. As a result, conventional generic expectations in the earlier, monkey-wrenching narrative seem in part thwarted or hollowed out, as the events described hover in weird tonal areas between individual heroism, destructive male grandstanding, and farcical comedy. Boyle's characterisation of Tierwater becomes a critique of tendencies within the kind of direct

action activism celebrated by Abbey or Earth First! For Tierwater's acts of destruction, having no significant effect, become successively more extreme, such as his trying to burn down a 35,000-acre forestry stand, or to topple electrical towers. His acts seem more and more motivated by social hatred, of politicians and big business, than by environmental ethics. Boyle also lets the reader see Tierwater's own implication in the very set-ups he wishes to destroy. His income comes from shopping centres inherited from his father. Between bouts of activism or prison, he lives a lifestyle of expensive cars. He even calls himself a 'criminal' ('just like you' – the reader), living 'in the suburbs in a three-thousand-square-foot house' (42) and, like the ecologist Aldo Leopold, knowing that even his precious nature trips rely on unsustainable forms of modern transport infrastructure and manufacture.¹⁸

Trexler reads the novel as dramatising a sense of the futility of earlier style environmental activism in a world in which increasingly 'no pinpointed conservation is possible: a forest is destroyed in a single storm' (144), and in which 'the tactics to preserve individual species and places are miscalibrated to the challenge of climate change' (143–4). For Trexler this highlights an enormous challenge to the form of the novel itself, with the realisation that 'the familiar structure of human conflict [in novels] – national, social and political – cannot wholly imagine our future climate' (144). Boyle's focus, characteristic of the realist novel, on the personality, emotions and desperation of one, male environmentalist risks being a reductive scale-framing of complex environmental issues, making them into matters of the strengths, weaknesses or integrity of the individual personality.

However, Trexler's conclusion about the futility of conventional conservation is surely conceding too much to a dubious element in Boyle's double-narrative technique. The near-future devastations of global warming are dramatised by Boyle with a vehemence such as to produce what is surely an excessive sense of fatalism, that *all* the kinds of activism engaged by Tierwater and Andrea were futile. In fact, the world of the 2020s seems set to be one poised *between* the projections of Boyle's two narratives: that is, a sense of possible

and meaningful engagement in individual activism remains, including work in ecocriticism, but it is being increasingly undercut not just by a sense of its own moral limits, but by a context whose scale, complexity, and unpredictability threaten slowly to turn it into empty theatre.

The novel ends peculiarly, with Tierwater and Andrea settling amid a devastated suburbia landscape into a slightly cosy, reduced parody of life before ('with the shoots of the new trees rising up out of the graveyard of the old' (274)), and the birds: 'they're still out there, they're still alive, some of them anyway' (273). The closing scene ends on a knowing fiction in which 'Petunia', the Patagonian fox, sole survivor of the rock star's menagerie, is introduced to a neighbour as simply a breed of dog:

Andrea's giving her world-class smile. 'We're the Tierwaters', she says. 'I'm Andrea, this is Ty.'

The girl just nods. She's looking at Petunia now, the smallest frown bunched around her lips. 'Isn't that a, what do you call them, an Afghan?'

'That's right', I say, 'that's right, she's a dog'. And then, for no reason I can think of, I can't help adding, 'And I'm a human being.'

The novel ends on this odd note of seeming humanist cosiness. But the one statement being an untruth – 'she's a dog' – also slightly skews the other, 'And I'm a human being.' Is there an implicit acknowledgement that such a statement can no longer mean here what it may have done in the past, and that the cosiness is a deceptive performance?

A climate change novel nearly contemporary with Boyle's also uses the technique of alternating narratives in different time frames, but does so in ways as if to highlight the very inadequacy of representation to reality that troubles Trexler. In Will Self's *The Book of Dave* (2006)¹⁹ two parallel alternating plots are set about five hundred years apart, seemingly quite unconnected to each other. There is a future drowned London, an archipelago of islands covered with flimsy huts, while the present-day narrative consists of the misogynist rantings

of one Dave Rudman, a London taxi driver, bitter about his divorce and limited access to his son. He writes down angrily on metal all his opinions about women and the authorities who license taxis, and he later buries this text, not knowing that, by mere chance, it will be dug up in the distant future and taken as a religious document (or the Davine word). This 'Book of Dave' then becomes the basis for a viciously patriarchal neo-feudal society in the British archipelago where the ruling priest is called 'the supreme driver' (this in a world with no cars) and everyone tries to speak a kind of sanctioned mockney slang. For instance, people don't greet each other with 'hello' but with 'Where to guv': 'screen' is the word for sky, 'headlight' the word for the moon, 'dashboard' for the milky way, 'a fare' is a human soul, 'curry' is the generic word for food, an 'opare' means an unmarried woman. So, there is no moralising about climate change, nor even an expressed awareness of it in any character, nor is it even a foreground topic. The bleak but apt comedy lies in the unseen absurdity of the connection between past and present, the complete lack of proportion between act and unthought consequence. Strong lines of connection are being suggested between future global warming and present misogyny, and with the fantasies of control implicit in car-driving, but not so as to form explicit or more than blurred narrative links. In Self's novel, the disjunctions in Boyle between Tierwater's life as an environmentalist in the 1980s and the chaos of the world in 2025 are taken to an extreme of absurdity in the disconnection between cause and effect, the London of the early twenty-first century and the archipelago five hundred years later that knows almost nothing of it. Again, the risk of such a mode of presentation is that the jump between the two narratives, while highlighting the daunting scale and intellectual challenge of global warming, evades the environmental choices of the present, and of possible activism today.

Yet, the impasse made legible in Boyle and Self, and traced in Trexler's broad survey of climate fiction, would not negate the value of work to address specific local forms of environmental violence, such as road-building, misuse of pesticides, chemical pollution or the continuing miseries of environmental injustice and viciously patriarchal values – all of them topics in other novels celebrated by

ecocritics.²⁰ The impasse does, however, reframe them in ways that qualify their possible impact on the broader scale. Addressing greed and environmental injustice in Brazil may not do anything to, say, reduce carbon emissions in China, even as these may form a greater threat to the Amazon forests. The challenge for environmentalists and ecocriticism becomes to be able to continue locally valuable work even when aware of its weak position on an opaque and dispiriting gameboard at the planetary scale. As Daniel King suggests: 'Certainly, there's not much point formulating a politics if we think we're impotent, so it has to be a politics based on hope, even if that hope doesn't translate into confident expectation.'²¹

NON-HUMAN AGENCY AND 'PETROFICTION'

Trexler's survey of novels concerned with climate change in some way argues that the scale of the issue must induce new forms of creativity and innovation, developing new modes of representing the obscure agency of non-human things, displacing the currently more 'canonical' attention to the supposed centrality of individual characterisation in a novel, and rejecting plots that turn solely around the familiar individual/society axis, or too narrowly on issues of 'identity' or cultural politics. Trexler is responding to the notion that the Anthropocene should not be understood as something for which the human is sole subject or agent but is rather an *assemblage* of human and non-human factors. He highlights the novel form's ability to stage the central place of landscape, or climate, or infrastructure, or machines or technology, or buildings, as 'formally constructive entities in fiction' (13).

Aspects of such a 'turn to things' were already prominent in accounts of a proposed subgenre of the novel first mooted some three decades ago. 'Petrofiction' is a coinage first used by Amitav Ghosh in a review of 1992,²² but since widely adapted in the growing field of Petroculture Studies, studies of oil and its profound effects on human life, from the brutal power of the oil industry, to oil's wide but usually unconsidered place as the condition of much of modern life,

the proliferation of private cars for example, or the widespread use of artificial fertilisers in agriculture. Oil is the dominant condition of the 'great acceleration' in world economic growth since 1950, of expanding consumption and population growth, and of suburbanisation based on private property ownership. It is also a decisive factor in wars and international instability. Its extraction and trading have sustained deeply oppressive regimes in Africa and the Middle East. It has widely degraded environments, both immediately in oil spills and in global phenomena such as global warming, the development of pesticides, the plastic infestation of the oceans, and the destructive effects of automobiles. After the Second World War, oil even 'changed what people dressed in, evacuated into, viewed and even ate, not just what they put in their power machinery' (Frederick Buell).²³

The telling fact for Ghosh was that the ubiquity of oil in modern life was, with rare exceptions, not directly engaged in the modern novel. A significant exception is Upton Sinclair's *Oil* (1927),²⁴ on the oil boom of southern California in the early twentieth century. Peter Hitchcock writes:

No aspect of the Southern California oil boom in the early twentieth century is excluded, whether it be the chicanery used to secure land leases, the bribes doled out to maintain sympathetic policies in Washington, or the American oil industry's ability to extend American power through exploration and extraction around the world.²⁵

The material substance, even where its exploitation or trade is not directly represented in Sinclair's text, is the basis of heightened material aspirations, sudden financial success and increased social mobility, and thus also as a source of friction between traditional modes of life, such as ranching and farming, and the forces of a supposed 'progress' or 'the future'.

Daniel Worden takes up Ghosh's point about the relative invisibility of oil in modern literature, and sees this as a kind of 'environmental unconscious' (Lawrence Buell):

Mowing the lawn, taking a road trip, getting a personal parking space at work, and teaching an adolescent child to drive ... It is the ruse of 'oil culture' that these activities do not typically strike us as activities having anything to do with drilling and refining, even though they are utterly dependent on the availability and social acceptability of fossil-fuel consumption.²⁶

Another instance would be the usually unseen reliance of the internet, email and pervasive forms of virtual reality on the global energy infrastructure. One job of ecocriticism is to bring this 'unconsciousness' into fuller awareness.

Edna Ferber's *Giant* (1952)²⁷ (made into a film by George Stevens in 1956) dramatises, and celebrates, the emergence and normalisation of the oil industry in a Texas previously associated with cattle ranching. It contrasts the changing attitudes of an old ranch-owning family to the sudden rise of one Jett Rink, a formerly impoverished ranch hand who becomes an oil tycoon. Oil is primarily judged as a medium of *social* change, whether 'bad oil' when in the form of Rink's neo-feudalist business empires, or the false glamour of the private plane, or 'good oil' when a fossil fuel-based prosperity enables the paternalistic reform of the ranch according to an enlarged version of family values, one embracing previously denigrated Chicano workers. Oil enables a 'social belonging that is constructed around the family automobile, which serves not as a sign of the parasitical oil industry but instead as marker of independent mobility and renewed possibilities in postwar culture' (444). In this way, *Giant* can be said to instantiate the way oil functioned and functions 'as a vanishing mediator between industrialism and family life', rendering it often 'an absent presence in American culture' and Western culture more generally.²⁸

Novels such as Sinclair's or Ferber's trace the effects of oil in the way one might expect in the tradition of the realist novel, through a focus on tensions in a family or a small human group. Oil is a major agent in the novels primarily as a catalyst, as making apparent or providing a condition for previously latent psychic or social conflicts. It permeates and, literally, powers a context in which traditional

forms of society, based on close communal bonds, local customs and inherited mores give way to looser, more individualist forms of society dominated by market forces. Nevertheless, both novels, because of their subject matter, cannot but produce for a reader some tension between traditional human-centred readings of a novel, with human character the primary determinant of plot and action, and a more post-human sense of the place of non-human agency in determining identity, personhood and relationships. A critical reader can no longer take oil to be some kind of background contingency or object for 'the characters', the occasion merely for releasing tensions, capabilities or insecurities already there. Instead, these novels can be seen to make more legible an environmental unconscious that underpins so many twentieth- and twenty-first-century dramas immersed in the deep material and psychic effects of a fossil fuel economy that is rarely made explicit. Alan Stoekl writes: 'that the illusion we call "Man" derived his "freedom" from the quantification and commodification of natural resources: oil to be sure, but also the steel, plastics and other materials that go to make up the "autonomist" lifestyle'.²⁹

Other novels render what may be an 'environmental unconscious' in texts from the developed North into an all-too conscious nightmare dominating all life. 'Petro-magic-realism' is a term suggested in a well-known paper by Jennifer Wenzel to describe texts set in colonial or postcolonial contexts and which trace the huge cultural, political and environmental upheavals caused by the discovery of oil.³⁰ Petroleum becomes the basis for large official claims of future unheard-of wealth, of fairy tale-like transformations in living conditions, even as in fact it helps give rise to a centralisation of political power, and to environmental degradation. Oil becomes the basis of loss of personal liberty to the 'vampire state' so graphically described by Ken Saro-Wiwa, executed in trumped-up charges in Nigeria in 1995 for leading opposition to the despoliation of the Niger Delta, victim of a corrupt government in thrall to faceless economic and corporate forces based thousands of miles away.³¹ In Arabic literature, Ghassan Kanafani's *Rijal fi al-Shams* (*Men in the Sun*) (1963)³² and the novels of Abd al-Rahman Munif³³ depict the

destruction of traditional agrarian societies by an oppressive modernity dominated by oil extraction.³⁴

In Helon Habila's postmodern novel *Oil on Water* (2011)³⁵ the central figure, a young journalist called Rufus, is witness to the environmental, social and psychic corruption of the oil delta of Nigeria. Almost all the people he encounters inhabit simplified personal narratives that make easy moral sense of the chaos and uncertainty around them, whether it is the ironically named 'the Professor', leader of a violent resistance group falsely claiming to speak for 'the People', or a petroleum engineer, with his colonial mansion and his talk of the promise of development. Such grand self-dramatisations are daily refuted by the opaque and complex sights and encounters of the delta, where the only sense of any moral centre Rufus finds is in people who refuse to have anything to do with oil, even if that means refusing compensation and being physically expelled from their land.

Habila's book also exemplifies, however, one clear danger for petrofiction, the inverse of that found in Sinclair and Ferber, who arguably overplay the primacy of human character and motivation. The danger is what Byron Caminero-Santangelo calls 'commodity fetishism', the false sense that the substance of oil itself must have inherently evil effects, separate from the motives and plans of the human beings who exploit it. Caminero-Santangelo criticises Habila's work for drifting too far towards such a sense of a quasi-magical 'oil curse':

Oil on Water brings to consciousness aspects of the crisis in the Niger Delta suppressed by various discourses, it also elides the *historical* generation of this situation by specific (neo-) colonial relationships. It has few references to the history of how foreign national governments, oil companies, the Nigerian petrostate, and resistance movements have shaped that crisis.³⁶

GENRE FICTION AND THE CHALLENGE TO REALISM

Debates about prose fiction and the Anthropocene repeat many of the same questions as petrofiction, but on an even vaster scale.

Both at their most forceful instantiate a claim Trexler makes for 'Anthropocene fiction' more generally, that 'melting ice caps, global climate models, rising sea levels, and tipping points have altered the formal possibilities of the novel' (13).

Trexler especially celebrates so-called genre fiction in this respect, with its attention to how deeply material things often envelop and even determine human action, in many thrillers or science-fiction novels, whether in the form of imagined new technologies or infrastructures, or the prominence of non-human forces such as rising oceans or a collapsing ecosystem.

Ecocritics have been a leading voice in calling for a revaluation of much so-called genre fiction. Heise observes how the very concept of the Anthropocene, in making us envisage the present from the viewpoint of a damaged future, already entails the common use of tropes associated with science fiction. 'Not only do works of environmental nonfiction draw increasingly on themes and narrative strategies of speculative fiction, but the Anthropocene itself can usefully be understood as a science fiction trope.'³⁷ Richard Crownshare foregrounds the popular genre of 'speculative realism', a form using basic conventions of realism but set in a hypothesised future – examples would be Robinson's 'Science in the Capital' trilogy, or Paolo Bacigalupi's *The Water Knife* (2015)³⁸ on disputes about water in a future desiccated Arizona. Crownshare risks the following generalisation: 'fictions of the Anthropocene might also be characterized as fictions of future or, what I call, speculative memory', i.e. usually dystopian scenarios that incorporate or enable retrospective overviews of how such a world came to be.³⁹

Another relevant feature of science fiction is that it is 'the literary genre that most explicitly deals with the planet and with humanity as a whole ...' (Fredric Jameson).⁴⁰

Ghosh, Mark McGurl and Trexler each argue for a drastic shake-up of the arguably elitist distinction between so-called serious literature and genre literature, particularly 'horror', 'science fiction' and 'gothic'. McGurl argues that genre fiction, especially the fantastic scenarios of some horror fiction, makes the problem of scale 'visible as a formal, representational, and finally existential problem',⁴¹

as opposed to the parameters of the realist novel, which typically 'eddies in an unheroic present'.⁴² Jameson writes:

It may be the very conventionality, the inauthenticity, the formal stereotyping of Science Fiction that gives it one signal advantage over modernist high literature. The latter can show us everything about the individual psyche and its subjective experience and alienation, save the essential – the logic of stereotypes, reproductions and depersonalization in which the individual is held in our time.⁴³

Gry Ulstein finds an 'important analogy between Anthropocene discourse and cosmic horror', meaning texts in the 'weird horror' tradition of H. P. Lovecraft, in which planetary or cosmic scale monsters highlight the complete insignificance of human beings on the larger scale.⁴⁴

This focus on genre literature might suggest that what is called for is a drastic reconsideration of current norms of literary quality. Ghosh makes a similar point in his *The Great Derangement: Climate Change and the Unthinkable* (2016).⁴⁵ This is a provocative if at times simplistic polemic against what he sees as the current paradigm of the literary novel as depicting some individual moral journey, the ubiquitous concern with kinds of identity politics, to do with gender, ethnicity, religion and so on. Ghosh finds here too often a blinkered limitation of ambition, oblivious to the wider kinds of spatial and temporal scale familiar in science fiction. He traces the 'separation of science fiction from the literary mainstream' as a 'slow and gradual' drawing of boundaries (effectively a demotion) (66) that took place during the nineteenth century, as bourgeois Western life became safer and more rationalised, leading to the undue privileging of a realist aesthetic whose principle was the exclusion of the supposedly improbable and a focus on the everyday. The result, he argues, is a now dangerous disjunction between the contemporary world and so-called serious literature, mostly oblivious to realities on the spatial and temporal scales familiar in science fiction. This

is part of the Great Derangement of his title. Novels engaged with mainstream issues of identity politics, even in the mode of protest, may be ultimately, he suggests, unwitting forms of 'collusion' with environmental destruction (121).

Ghosh criticises notions that literary fiction is no more than 'a form of bearing witness, of testifying, and of charting the career of the conscience' (128). This has had the unwelcome side effect of reinforcing in our thinking the privilege of the immediate human scale as the main and even exclusive reality – even as the realm of what we perceive around us with our five senses is becoming less and less reliable as a clue as to the state of the Earth. He also relates this to the far bigger question of why in southern Asia climate change is not a significant issue, despite it being a 'slow calamity that is quietly but inexorably destroying livelihoods and stoking social and political conflicts. Instead, political energy has increasingly come to be focused on issues that relate, in one way or another, to questions of identity: religion, caste, ethnicity, language, gender rights, and so on' (126).

Many ecocritics would argue against Ghosh here, his careless implication here that 'questions of identity, religion, caste, ethnicity, language, gender' have little to do with structures of power and economics implicated in global warming. There may also be another problem with counter-affirmations of genre fiction. Neither McGurl nor Ghosh effectively deal with the challenge of the way many readers actually relate to genre fiction in general or to so-called cli-fi in particular. For a reader's relationship to the dystopian futures now repeatedly depicted in films or in novels is very often to be engaged in a kind of doublethink. Images of flooding, social collapse, drought, water wars and so on are clearly the expression of an acknowledged, and growing, social anxiety, and yet also and contradictorily, of its *denial* through its transformation into forms of spectacle and thriller. Such cultural products easily lend themselves to being read as symptoms of a sense of political impotence or trivialisation.⁴⁶ The challenge is not so much of the public not knowing or not believing about global warming but an inability to integrate it into daily, routine modes of thinking and acting. So it tends to get evaded or displaced from being

an object of serious conversation into a source of quips and jokes, or uneasy, sensationalist entertainment. A consumerist type response even to current disaster scenarios is very much a phenomenon of Western consumer society, of Guy Debord's 'society of the spectacle',⁴⁷ with the TV cult of 'live' 'breaking news', with its pseudo-suspense dramas of constantly updated 'leading stories'. There is an apt satirical moment in the first book of Robinson's 'Science in the Capital' trilogy in which one of the central characters, trapped in a flooded Washington where the famous civic monuments are now surrounded by water, looks around and sees that the people in the office are all watching TV, which is simply broadcasting their own immediate locality (*Forty Signs of Rain*, 332–3).

Ghosh contrasts what he sees as the parochial condition of Western novels with works coming from India and Arabia, places where the values of a consumerist individualism are less all-determining, and also with traditions of epic and myth that are more comfortable with dealing with large human collectives and non-human agency, such as Munif's novel *Cities of Salt*. For writers in Europe and North America, however, the challenge would be that of disconnecting associations of climate fiction from what might be nicknamed the consumerist culture of the 'good read', which acts in this case as effectively a form of environmental denial.⁴⁸

Ghosh's opposition between a complacent realism and the inventiveness of genre fiction and postcolonial writers like Munif can seem a simplification. In fact, many literary features usually associated with 'postcolonial contexts' have become features of the twenty-first-century Western novel. With its bizarre kinds of action at a distance, the collapse of safe distinctions between the trivial and the disastrous, and the proliferation of forces that cannot be directly perceived, the Anthropocene becomes deeply counterintuitive. It may find its analogue in modes of the fantastic, new forms of magic realism, or texts in which old distinctions between 'character' and 'environment' become fragile or break down.

Elizabeth DeLoughrey reads such a turn away from realism in the work of New Zealand Maori author Keri Hulme, seeing it as 'suggestive in an era in which our knowledge of global climate

change produces new economies of speculation'.⁴⁹ Magic realist writing has been primarily associated as a form with world-perimeter societies where, as in the mass plantation ecologies of the Caribbean, people 'lack autonomous control over the production of nature, and hence over the production of social reality, [and so] this reality appears illusory or unreal because it is authored or manipulated by outside powers' (Michael Niblett).⁵⁰

But in fact, this dislocated sense of reality is hardly now confined, if it ever was, to postcolonial contexts. The Anthropocene context now renders it a manifestly global condition, albeit one registered in very varied and often iniquitous ways.

Karen Tei Yamashita's *Tropic of Orange* (1997)⁵¹ is a fine example of how magic realist and genre fiction techniques can become a mode of environmental analysis. Set largely in Los Angeles, it follows diverse characters through a week of surreal disasters caused by 'magical' events that warp the line of the US–Mexico border, 'smashing Mexico and Los Angeles together' (14) in revelatory distortions of temporal and spatial scales. The orange of the title refers to a fruit taken from Mazatlán in Mexico where an L.A. reporter called Gabriel was trying to build a kind of pastoral haven for himself, a place of supposed retreat, escape and self-discovery – all values which echo anachronistically Romantic concepts of 'nature'. The scrawny orange that grows there happens to be sited precisely on the Tropic of Cancer and, as another character brings it back to Los Angeles, the tropic, 'a line – finer than the thread of a spiderweb' (12), moves north too. The distortions of space crash into what becomes a huge traffic jam on the Harbor Bay Freeway, spreading to paralyse the city, entangling people and histories previously kept apart. 'In a moment, everything could fold itself, and time stand still' (86). Spreading fires force the homeless out of their underpass shelters, and they move into the abandoned cars on the highway, creating a temporary community that is overtly utopian and pastoral – until attacked by the army. The strange supernatural character who carries the orange, called Arcangel, claims to be centuries old and to have witnessed the violent colonial history of which Los Angeles is a product. As Melissa Sexton shows, the fantastic element of Yamashita's novel serves as

the making visible of the historical, social and ecological dynamics and violence underlying the modern city:

Once Arcangel crosses the border, a deluge of people and material goods follows, the flows of capital solidifying into a crowd of people, corn, bananas, coffee, and sugar cane. Arcangel also carries history across the border with him, the murdered peoples and destroyed lands of the South: '*the halls of Moctezuma and all 40,000 Aztecs slain*', '*the burned and strangled body of the Incan king Atahualpa*', '*25 million dead Indians*', and '*the rain forests, El Niño, African bees, panthers, sloths, llamas, monkeys, and pythons*'. (200–01; emphasis in original)⁵²

The spatial distortions become such that the prose describing events can be hard to follow, as 'Everything's colliding into everything' (192). Non-human animals ('*panthers, sloths*', etc.) transgress both the literal and conceptual spaces to which modernity had consigned them.

'Magic realism' is a mode originally associated with novels that engage conflicting 'modern' and 'traditional' belief systems or religions in colonial and postcolonial contexts. It also commonly features the breakdown or destabilisation of the Western strict human/animal distinction.⁵³ Its increasing use in so-called first world contexts, such as Yamashita's Los Angeles or Self's London, is symptomatic of the kind of scalar, cognitive, economic and ecological dislocations associated with both global capitalism and with the Anthropocene, though Sexton herself prefers Jason Moore's coinage 'the Capitalocene' for the newly recognised global context (20), stressing, as its name implies, the central agency of modes of capitalism and power entrenched over half a millennium.

CONVENTIONS OF CHARACTERISATION

How might trying to conceive reality on what are often counter-intuitive scales affect the conventions of and modes of characterisation

in the novel? It was one of the criticisms of Robinson's 'Science in the Capital' trilogy that it raised this issue but did little to question the rather conventional psychology of its cast of characters. This is despite the author's formulation in a 2004 interview of just this problem of characterisation for novelists and film-makers, arguing that speculative fiction set in the near future can help at least raise it to more general consciousness:

Sometimes it seems like everything is possible; on the other hand, it also feels like nothing fundamental will ever change again (capitalism); and in that weird dichotomy of feeling we carry on day by day. It's a strange sensation and I think day-after-tomorrow sf can capture it very nicely, if wielded correctly. Here is a place where art as fidelity to the present may even demand science fiction, as I've been saying or rather practicing since the 1970s.⁵⁴

The risk of such consciousnesses raising would be that it furthers:

a process whereby the present is derealized, news of some new extinction threat becomes *déjà vu* ... in an odd psychic condition, which I can testify to, in which environmental knowledge slides into a form of familiarity and inevitability that in itself has the comfort of denial.⁵⁵

Robinson's trilogy raises powerfully but then evades the issue of how the Anthropocene, a context challenging conceptions of what human beings are, must also affect the conventions of characterisation in a novel. If, traditionally, the novel has been a form valued for its inventiveness in representing the interior life, how might this adapt to a context entailing impersonal global dislocation? Frank Vanderwal's changing sense of self remains the human focus of Robinson's narrative, but this becomes a fragile exercise in dubious scale-framing whereby vast social and political changes are dramatised within the account mainly of one individual character's

bland trajectory of personal development and self-realisation, in the old *David Copperfield* manner.

Given that the novel as a genre tends overwhelmingly to focus on stories of individual growth or dramas of consciousness, crises of identity or of relationship, etc., questions must arise on the limits of what may seem the form's built-in individualistic stance, its reinforcing the privilege of the immediate human scale as the main and even exclusive reality. To what degree does a focus on the possible transformation of consciousness actually evade more direct economic and ideological issues, and demands for direct collective action?

Pieter Vermeulen engages with the Anthropocene as a peculiar new form of 'trauma', challenging the way the novel as a literary form has long served to underwrite a specifically Western notion of human personhood:

From [György] Lukács on, novel theory has underlined the intrinsic connection between the modern novel and the formation of a 'self-governing individual' that comes into existence by negotiating its relation to the social reality that sustains it, a process with which the reader is invited to empathize ... The genre's unprecedented investment in psychological depth and in the detailed mapping of its characters' environment subtends what Nancy Armstrong calls 'an ubiquitous cultural narrative that ... measures personal growth in terms of an individual's ability to locate him- or herself productively within the aggregate.'⁵⁶

'Psychological depth', personal growth in a social context, a sense of autonomous individuality – none of these work for Don DeLillo's *Point Omega* (2010),⁵⁷ Vermeulen's topic in another essay. He also takes up the question of genre fiction, more sceptically than some, finding it limited as a mode, principally, of too escapist entertainment. While such work may have 'the means to *evoke* nonhuman otherness, it cannot therefore do the cultural work of making it *matter* as a formal and existential *problem*'. Better would be the aim

of 'recording the breakdown of the human in the face of the non-human in the very form through which the human has traditionally been imagined: in the literary novel', as with DeLillo.⁵⁸

Point Omega can be read as an attempt to overcome the reliance of the novel form on distinctive events and identifiable individual agents, which can be considered as limitations on the novel's ability to abandon conventional realisms and imagine the geological ramifications of culture.⁵⁹ Two chapters frame DeLillo's text at its beginning and end, entitled 'Anonymity' and 'Anonymity 2'. Both are set in the Museum of Modern Art in New York, where David Gordon's installation *24 Hour Psycho* is playing. This is a projection of Alfred Hitchcock's famous film, with no sound, slowed so as to take exactly twenty-four hours. Vermeulen argues that, in reducing the human action to this weird and silent slow motion, *24 Hour Psycho* takes up 'a film that is often seen as a paradigmatic illustration of Freudian psychoanalysis, only to remove the model of subjectivity that underlies it' (74). The effect of the slowed, silent film is to foreground people as merely physical or material entities. Vermeulen reads DeLillo as imitating this de-psychologising effect in his verbal narrative, in a rendering of a 'different mode of temporality ... not described as an escape from human time into a timeless realm that successfully transcends it – instead it is an experience that locates a rupture *within* human life' (75). That is to say, human narrative time is simply being registered on a different scale, in a reifying, de-'humanising' way.

Between these framing chapters the bulk of the text depicts a peculiarly eventless interview between a young film-maker and a retired defence consultant, Richard Elster, who is trying to give 'words and meanings' to the Iraq war. Elster lives in the desert, and he uses the sense of deep time in the desert landscape to project for him a sense of refuge from human violence. In sum, Vermeulen reads DeLillo's text as exploiting the affects that arise from juxtaposing plot and character seen on normal or expected timescales with a sense of inhuman materiality and deep time that renders them radically contingent.

Vermeulen's work has been among the most innovative in considering the strain that a twenty-first-century environmental

awareness can pose to the novel as a form, perhaps even taking some of its conventions to breaking point:

If the novel form has traditionally been invested in the exploration of the fate of the individual and its relation to its social contexts, the discourses of the Anthropocene and on the geological ramifications of human culture ... present the contemporary novel with the challenge: that of scaling up its imagining of the human to the dimensions of biological and geological time.⁶⁰

In *Point Omega* elements of the plot that might normally set up expectations of psychological depth and narrative resolution are short-circuited. A stalker of Elster's daughter features in an unresolved subplot in which she is kidnapped but the stalker never identified. The text features a number of anonymous characters. Vermeulen quotes Peter Boxall on the engagement with temporality in contemporary fiction: "'the perception that the narrative mechanics which have allowed us to negotiate our being in the world, to inherit our pasts and to bequeath our accumulated wisdom to the future, have failed'" (71).⁶¹ Narrative forms survive, but less a mode of immersive truth (Erin James) or humanist interconnection than as an engaged, chastened reckoning with human finitude.

Vermeulen's interest in novels like *Point Omega* or Tom McCarthy's *Remainder* (Paris: Metronome Press, 2005) is in texts that engage with effects of trauma that are not linked to the usual narrative anchors in psychological realism or its 'generic investment in psychological depth, social accommodation, and identification'.⁶² DeLillo's novella exemplifies a tendency already observed with poetry and ecopoetry, the move away from texts based on some sort of sequential narrative unfolding at a pace that makes sense in terms of given categories of human experience, in favour of a disjunctive art of juxtaposition, of multiple time frames and dislocations.⁶³ Building on the observed analogy between the structure of DeLillo's novel and the poetic haiku, one can say that the novella pushes narrative in a direction normally associated with the poetic as non- or

anti-narrative, as with, say, various so-called ecopoems in which a sense of other temporal scales suddenly erupts upon the mind, an epiphany of non-meaning or other meaning. This comparison, along with the obvious prominence and even privilege given to nonverbal or film art in the novella, underlines the query that ends Vermeulen's essay, on the challenge of rethinking human life, and our ethical and political vocabulary (fairness, respect, etc.) once old scalar norms are accepted as fragile or inadequate:

[this is] the question of whether the novel form will be able to respond to that imaginative challenge, or whether its undeniable limitations as a cultural force will limit its role to communicating the urgency of a new law of the earth it is no longer able to legislate.⁶⁴

Will Self's short story of the early 1990s, 'Scale', which is in part on climate change,⁶⁵ can be read as taking further, in a different direction, the questions of characterisation broached by Vermeulen in relation to DeLillo. The character created as the speaker of Self's peculiar monologue certainly seems more fitted than Robinson's Vanderwal to dramatise the strains and pressures of an Anthropocene context, what with his psychic incoherence, his derangements of scale, and, despite claims to the contrary, his loss of proportion. All in all, 'Scale' highlights the way a text on climate change may make even the notion of making sense itself rather fragile.

The unnamed speaker in Self's 'Scale' is a solitary morphine addict and minor writer, struggling to support himself and to make compulsory payments to his divorced wife. He lives off the royalties from his detective fiction, but the nerdish obsession of his life is motorways. He has a projected academic thesis entitled 'No Services: Reflex Ritualism and Modern Motorway Signs (with special reference to the M40)'. A later section of the story is set in his old age, by which time he has achieved the title of 'the Macaulay of the M40' with such books as *A History of the English Motorway Service Centre* and papers with titles like 'When is a Road not a Road?'. This nerdish addict lives in a bungalow off the M40 motorway in the town of Beaconsfield,

right next to a miniature model village for which Beaconsfield is most known. The focus of this story is his loss of a sense of scale, triggered initially by a disorienting piece of road signage for cars leaving the motorway: 'I fell into this gap', he says, 'and lost my sense of scale' (94). A drugged-up dream sequence sees him enter, at reduced size, a small simulacrum of his own bungalow sited in the model village, and then, within that, an even smaller copy of the same building as he shrinks again and enters another smaller copy, and then again, till he reaches sub-atomic size, becomes vulnerable to the quantum uncertainty principle, is accidentally observed by a passer-by and vanishes.

Such incongruity in 'Scale' can be related to the issue of the limits of narrative in relation to the scale and complexity of the Anthropocene. 'Scale' is in part a study of the psycho-pathology of the motorist, his entrapment in a world of driving and waste, with such images for the motorway as 'six lanes of blacktop twisting away from you like some colossal wastepipe, through which the automotive crap of the metropolis is being voided into the rural septic tank' (113). The trajectory of the story entails drastic climate change, and it ends in a future in which the speaker, in old age still an enthusiast of motorways, has had to swap his car for a golf buggy to obey new laws making all vehicles electric and with a speed limit of 15 miles an hour.

We also read:

I am also comforted in solitude by my pets. One beneficial side-effect of the change in climate has been the introduction of more exotic species to this isle. But whereas the *nouveaux riches* opt for the Pantagruelian spectacle of giraffes cropping their laburnums, and hippopotamuses wallowing in their sun-saturated swimming pools, I have chosen the more elegant frill necked lizard ...

When evening comes, and the visitors have departed, I let it out so that it may roam the lanes and paths of the model village. (220)

The effect of Self's focus on scalar dislocation is to elicit a post-human as opposed to humanist conception of character. That is to

say, the seemingly coherent if eccentric personhood of the central speaker seems, on examination, to be merely the surface effect of an impersonal dynamic of which he is unaware. This is marked as a reader notices that many of the narrative incidents are in fact generated by the use and motivation of unacknowledged puns, all on various senses of the word 'scale'. For instance, the speaker's amateur morphine production leaves all sort of 'scale' on his crockery. He has to drive down the motorway to the town of High Wycombe to buy a descender for his kettle. His bathroom scales are stolen by a member of a youth cult that gathers in the model village. He discusses the scales of lizards, then later visits the Lizard promontory in Cornwall. With so much of the action based on punning in this way the text seems to challenge any reader committed to making sense of things in terms of some relatively coherent 'real-life' and linear storyline.

Puns, as Richard Walsh says, enact the destabilisation of normal scales of reference.⁶⁶ The smooth surface of the linear narrative turns out to be the surface projection of what is largely semantic chance. Jonathan Culler writes that puns foreground 'an opposition that we find it hard to evade or overcome: between accident or meaningless convergence and substance and meaningful relation'.⁶⁷ Puns sit incongruously on the borders of meaning and accident. As such, they are also peculiarly appropriate as a device for a climate change text, one which juxtaposes the clashing topics of a blinkered motorway obsession and global warming.

Self's 'Scale' exemplifies how the most interesting and engaging literary prose on climate change is of often of the uncomfortably comic kind – uneasy comedies of situation based on the scalar discrepancy between character and context. T. C. Boyles's *A Friend of the Earth* was partly of this nature. Other examples would be Self's own *The Book of Dave*, Ian McEwan's *Solar* (2010)⁶⁸ or several short stories by Helen Simpson (*In-Flight Entertainment*, 2011).⁶⁹ Simpson's short story 'Inflight Entertainment' (6–21) depicts a conversation in the first-class section of a plane on the way to Chicago, between a selfish businessman and an aged climate scientist. The scientist has given up as hopeless the idea of

any sort of campaign on the issue and his dream is now just of joining 'the *other* mile-high club' (19), meaning those who die at 6,000 feet. Simpson juxtaposes uncomfortably a routine concern with food, service and comfort with images of social collapse already become clichéd and tired. Another story depicts a young couple holiday-hiking around France, as the young woman becomes exasperated with her partner's endlessly harping on at picnics about the end of the world.

Self's 'Scale' text is *sort of* funny, but it is not the sort of humour that serves to reinforce social consensus, let alone stereotypes. In his study of the nature of humour the philosopher Simon Critchley quotes Henri Bergson, that 'we laugh every time a person gives an impression of being a thing'. Also:

The comic world is not simply 'die verkehrte Welt', the inverted or upside-down world of philosophy, but rather the world with its causal chains broken, its social practices turned inside out, and common-sense rationality left in tatters.⁷⁰

Self's text seems designed as a critique of the norms of scale that characterised the realist novel during its Victorian heyday. The narrator quotes a telling criticism from his father:

There is no sense of scale in your books ... Really important writing provides some sense of the relation between individual psychology and social change, of the scale of things in general. You can see that if you look at the great nineteenth-century novels. (208)

Self dramatises a world that makes a mockery of Henry James's famous statement that 'What is character but the determination of incident? What is incident but the illustration of character?'⁷¹ (122). Here both incident and character are deeply contaminated by the effects of an unmeaning programme, and the context of a general and genuine loss of proportion.

Put Robinson and Self next to each other and it is not hard to see which writer's mode of characterisation would better suit the kind of world in which, to repeat Bill McKibben's point about CFC gases and the ozone layer in the 1980s, one can imagine humanity accidentally consigning itself to oblivion by the use of underarm deodorants.⁷²

The challenge of representing the Anthropocene in aesthetic form is not one that admits easy conclusions. The global scope and counterintuitive scale of key issues seem to pose new problems. One of these may lie simply with the very ambition or expectation that some sort of comprehensive representation of the Anthropocene is possible. Given that the environmental issues often exist on several, different scales at the same time, involving multiple human and non-human factors, then no conceivable representation of some overall, planetary scenario is going to escape claims that it is evasive in some way or another. A vivid locally realist treatment, such as Kingsolver's, also risks shrinking towards being only another human-interest story, as I have argued elsewhere,⁷³ while texts that deploy provocative tropes of the fantastic, such as Self's or Yamashita's, may seem liable to the criticism that they evade issues of global warming and responsibility as they already impinge on current, day-to-day, mundane reality. What the environmental challenge does achieve, however, is a continual probing of the inherited nature and limits of the novel as a form, the need for a newly urgent inventiveness.

5 Material Ecocriticism

To erode the boundaries between ‘the natural’ and ‘the cultural’ must also entail a revised sense of intellectual boundaries. Ecocriticism is now one strand within the rich emerging category of the ‘environmental humanities’. It positions itself on a fluid, unstable and exciting border between the humanities and the natural sciences, forming a site of interdisciplinary influence and appropriations: for instance, the term Anthropocene is best detached from geology but seems now indispensable, while the terms ‘ecology’ and ‘ecological’ have long taken on moral connotations far removed from their original context in the biological sciences. This intellectual hybridity is the most exciting if also most risky characteristic of ecocriticism. For any ecocriticism of value must try to be competent about *all* the factors at work in environmental degradation – material, cultural, psychological, legal and political.

The challenge once again is that ‘the environment’ is effectively *everything*. A recent school of thought that has tried to rise to this challenge is so-called material ecocriticism, one of the leading developments in ecocriticism over the past decade.

Serenella Iovino and Serpil Oppermann, two leading proponents of material ecocriticism, offer this definition:

Material ecocriticism ... is the study of the way material forms – bodies, things, elements, toxic substances, chemicals, organic and inorganic matter, landscapes, and biological entities – intra-act with each other and with the human dimension, producing configurations of meanings and discourses that we can interpret as stories.¹

Material ecocriticism is not a single, consistent body of thought, but a loose amalgam of various positions held together by the

common theme of affirming the view that non-human matter has an incalculable agency of its own. People adapt for ecocriticism arguments taken from elements of feminist philosophy and speculative physics, building a critique of Western thinking as dominated by forms of anthropocentrism unable to recognise or fully conceive non-human entities except in appropriative or dangerously misleading terms. Practitioners of material ecocriticism present as their mark of innovation their full recognition of non-human agency as crucial in human affairs, stressing the fragility and inadequacy of old distinctions between the natural and the cultural, and the way the ecological and the political cannot be fully separated from each other. They attempt to do justice to the fact that 'All things connect and cannot escape into separation' (Steve Mentz).²

Material ecocriticism describes itself as a branch of the so-called 'New Materialism'. Diana Coole, a leading theorist of this movement, writes: 'the predominant sense of matter in modern Western culture has been that it is essentially passive stuff, set in motion by human agents'.³ The refusal of agency to matter is held to be the basis for the presumption that the human species has the right to mould all nature to its will. Against this presumption, matter is to be affirmed as 'possessing its own modes of self-transformation, self-organization, and directedness, and thus no longer simply passive or inert'.⁴

A recurrent reference in material ecocriticism is to the proto-science of 'biosemiotics'. In the summary of the home web page of the International Society for Biosemiotic Studies we read:

Biosemiotics is an interdisciplinary research agenda investigating the myriad forms of communication and signification found in and between living systems. It is thus the study of representation, meaning, sense, and the biological significance of codes and sign processes, from genetic code sequences to intercellular signalling processes to animal display behaviour to human semiotic artefacts such as language and abstract symbolic thought.⁵

What attracts material ecocritics here are the broader, philosophical implications of the ubiquity of semiotic processes in living things: the fact that human usage of signs, and the vast edifices of language and culture, may be placed in continuity with forms of sentience and communication in other creatures. Thinkers abandon the untenable dualism between the human, as supposed sole home of the realms of 'meaning' and 'significance', and other living entities, allowed only 'stimuli' and 'impulses'. Jesper Hoffmeyer writes:

Rather than concluding for or against fish having experiences or sentience, I think our fast-growing knowledge of the surprisingly sophisticated cognitive capabilities of fish and animals in general directs us to the idea of sentience as a unitary phenomenon. There are many kinds of sentience, and our own human kind of sentience is just one example in a multigraded series.⁶

Biosemioticss and material ecocriticism are both diverse and varied fields of thought, often analogies for each other rather than a shared project, but the refusal of lingering assumptions of human exceptionalism and sovereignty unites them.

Iovino, in a review article, sees material ecocriticism and the 'New Materialism' as endorsing the view that not just agency but some conception of 'mind' should be conceded to physical processes too.⁷ These may seem rather abstruse questions of ontology or metaphysics. However, material ecocritics see their work as deeply political and emancipatory in nature. Alf Hornborg highlights their political agenda: 'Central to what these researchers have in common is the conviction that the Enlightenment view of nature is inextricably tied to colonial European ambitions to dominate the world.'⁸ The claim is that what are presented as basic distinctions of being – between mere passive matter and active human agency – are really political distinctions, underwriting destructive hierarchies of significance and consideration, such as 'black' as opposed to 'white', 'female' as opposed to 'male', and, here, a supposedly inert mere 'matter' as opposed to human 'mind' or 'spirit'.

The ramifications of this argument seem liberating. Joni Adamson, for example, takes up earlier work on Native American cultures to argue that modes of thought either dismissed in the past as 'animism', or celebrated in terms of some vague notion of 'ecological' connectedness, can now be seen as making philosophical claims to be taken seriously.⁹ Attitudes such as conceiving of trees as 'selves' or 'mothers' need not be read as myths or superstitions to be either laid aside, approved by their loose correlations with the 'ecological', or endorsed out of respect for cultural difference, but taken as expressing an ontology in accord with that now emerging in a material ecocriticism, alert to the way 'matter as a text [is] composed by multiple agencies, at once material, semiotic and discursive' (Iovino and Oppermann).¹⁰ Adamson endorses the work of two films taking up Native American belief systems about the material world as a multiplicity of agential 'selves' that deserve understanding and respect, Juan Carlos Galeano's film *The Trees Have a Mother: Amazonian Cosmologies, Folktales, and Mystery* (2008) and James Cameron's *Avatar* (2009).

Material ecocriticism reads as giving an ethical interpretation of something the Anthropocene has made all too plain – that the material and natural world is falsely conceived as the realm of passive, separate entities, ripe to be used at will as resources for humanity. Rather, they are complex, interconnected and surprising networks of things, each with its own agency, always liable to interact with human plans in surprising and disconcerting ways ('We live in the world of unintended consequences' (Ulrich Beck)).¹¹ In the words of one eco-materialist: 'Agency is distributed among multifarious relations and not necessarily knowable in advance: actions that unfold along the grid surprise and then confound' (Jerome Cohen).¹²

Jane Bennett, one of the leading thinkers in the 'New Materialism', argues that 'materiality' is better conceived not as any sort of inert substance, but as something that *acts* on other things, as a kind of relational *force*. To defend and illustrate this, she uses a concept of 'assemblages' to describe the way combinations of agents, some human, but many non-human, can work together to produce

unexpected effects ('an actant never really acts alone').¹³ Agency is always '*distributive* agency' (21).

The notion of an 'assemblage' relates in turn to crucial notions of *complexity* and *emergence* – the way events may unfold from out of a complex interaction of agents, accidents and happenings, such that the result comes to exceed the human capacity for foresight, let alone control. Bennett's example is a power outage that affected around 50 million people in North America in 2003. Such a breakdown is an example of *emergence* through the fact that, with a system so physically complex and involving different local jurisdictions, the issue or issues which led a local failure to induce so widespread a collapse could not reasonably have been foreseen, and are still not fully understood:

To the vital materialist, the electrical grid is better understood as a volatile mix of coal, sweat, electromagnetic fields, computer programs, electron streams, profit motives, heat, lifestyles, nuclear fuel, plastic, fantasies of mastery, static, legislation, water, economic theory, wire, and wood – to name just some of the actants. (25)

Something new and unexpected happens that cannot be traced back to some unitary cause. This muddies somewhat the desire to attribute blame and responsibility:

Though it would give me pleasure to assert that deregulation and corporate greed are the real culprits in the blackout, the most I can honestly affirm is that corporations are one of the sites at which human efforts can be applied, that corporate regulation is one place where intentions might initiate a cascade of effects. (37)

Again, a newly acknowledged feature of environmental politics is that complexity itself is become an environmental problem.

Iovino, together with Oppermann, has written many manifesto-like essays for material ecocriticism. She traces the genealogy of material ecocriticism to two things: first, to the revolution in twentieth-century physics (relativity, quantum mechanics), along with the work of chaos and complexity theory in demonstrating the elusive agential nature of matter; and second, to controversies about 'postmodern' thinking and against the narrowness of claims that reality is 'socially constructed'.

However, reference to quantum mechanics, etc. seems both affected and unneeded here. It has been the environmental crisis itself that has awoken thinkers to the capricious and emergent complexity of the material world, the way people find themselves increasingly living in the realm of daunting side effects of earlier unconsidered actions and assumptions. The Anthropocene forms the paradigm instance of an 'assemblage' in Bennett's sense. One needs simply to look around to the reality of a world that is, in the words of Bonneuil and Fressoz, an intricate network in which social and natural arrangements mutually reinforce each other:

European consumer attitudes and the orangutans of Indonesia, markets and rainforests, social inequalities and endocrine disturbance, state powers and the chemical composition of the atmosphere, representations of the world and energy flows.¹⁴

SOME MATERIAL ECOCRITICAL READINGS

Material ecocriticism is at its best when it does not strive to build up too high a quasi-philosophical superstructure on the nature of its claims, but gets its hands dirty, so to speak, in focused engagement with a specific issue. Stacy Alaimo's essay 'Oceanic Origins, Plastic Activism, and New Materialism at Sea' is an instance of such work.¹⁵ Alaimo's is one of a recent series of publications arguing against the bias of ecocriticism towards land-based life and its relative ignorance of issues relating to seas and oceans, which

after all comprise two thirds of the Earth's surface (Steve Mentz's *Shipwreck Modernity: Ecologies of Globalization, 1550–1719*, 2015, is another example).¹⁶ The dire conditions of the oceans are too easily overlooked. Alaimo lists:

Climate change. Ocean acidification. Dead zones. Oil 'spills'.
Industrial fishing, overfishing, trawling, long lines, shark finning.
Bycatch, bykill. Ghost nets. Deep-sea mining. Habitat destruction.
Dumping. Radioactive, plastic, and microplastic pollution.
Ecosystem collapse. Extinction ... (186)

The topic of the oceans highlights that major feature of the global environmental crisis, the disjunction between day-to-day perception (land-based, limited in scale) and broader decisive realities that are as out of sight as the ocean depths. This disjunction is exacerbated by processes of commodification and resource capture that disguise the real material side effects of, say, a plate of sushi: 'imagine "being served a plate of sushi. But this plate also holds all of the animals that were killed for your serving of sushi. The plate might have to be five feet across"' (Stefan Foer, quoted in Alaimo, 187). Seemingly trivial items, like plastic bags, or the ingredients of a cosmetic, can form a threat to unseen creatures across the planet, as with starving turtles, their stomachs bloated with plastic bags they mistook for jellyfish.

This reworked image of sushi exemplifies some of the work of 'eco-materialism' more generally, i.e. the rendering visible, in either sensuous image, thought experiment or analytical research, of the ways the human body is enmeshed in 'networks that are simultaneously economic, political, cultural, scientific and substantial', as 'what was once the ostensibly bounded human subject finds herself in a swirling landscape of uncertainty where practices and actions that were once not even remotely ethical or political matters suddenly become so' (Alaimo, 187).

Alaimo deploys a concept of '*transcorporeality*' outlined in *Bodily Natures*, an earlier study of 2010.¹⁷ Her focus is on the permeability of the human body to all sorts of environmental influences,

such as pollutants or environmentally induced disease, and how these can be read in relation to issues of environmental justice, even as 'global capitalism and the medical-industrial complex reassert a more convenient ideology of solidly bounded, individual consumers, and benign, discrete products' (187):

Humanism, capitalist individualism, transcendent religions, and utilitarian conceptions of nature have labored to deny the rather biophysical, yet also commonsensical realization that we are permeable, emergent beings, reliant upon the others within and outside our porous borders. (*Bodily Natures*, 156)

Once again, intellectual critique hinges around the effects of a change of scale, but this time to the very small. What happens if, under the rubric of 'trans-corporeality', the human body must be recognised as an agglomerate, intersection and place of transit for innumerable minuscule entities, both living and non-living, but none of them chemically inert? Trans-corporeality lies in a realm of indistinction between the human and its animal 'others'. A first part of Alaimo's 'Oceanic Origins' is a study of popular science accounts of the biological relation of the human body to the oceans, mindful that all life on Earth was originally from the sea and is marked essentially by that origin, as with commonly heard if false assertions that human blood still has the brininess of sea water. Alaimo writes: 'narratives, theories, paradigms, and practices that reveal interconnections between these spheres may encourage marine environmentalisms' (188).

Her interest is in the way many popular science books about human origins from the oceans underline the basic facts of our trans-corporeality but then swerve from some of its more radical implications. Alaimo traces in Neill Shubin's book *Your Inner Fish* (2009)¹⁸ a tension between the evolutionary arguments and their author's residual commitment to forms of humanism, a kind of species narcissism which Shubin's own topic should have undermined. Alaimo's objection to books such as Shubin's is that the stress on the human as the completed product of a long evolutionary

process reaching back to the oceans can misleadingly project a sense of the human as the final destination, even implicit purpose, of it all. The very term '*the human*' also projects a falsely atomistic, self-contained image:

A more potent marine trans-corporeality would submerge the human within global networks of consumption, waste, and pollution, capturing the strange agencies of the ordinary stuff of our lives.¹⁹

Alaimo's work can be aligned with the approach in critical animal studies on the 'indistinction' of 'human' and 'animal' (Matthew Calarco), the stress on shared material vulnerability, that we are all mere 'meat' to some other creature. Calarco asks in this respect:

What kind of politics might emerge beyond the exclusion of human animality and the biopolitical shaping of 'proper' humanity? What practices might correspond to a life in which 'human' and 'animal' are no longer sharply delineated and separated?²⁰

The method of an essay like Alaimo's, in simply tracing material connections and the destructive ramifications of human actions across diverse realms in space or time, forms already an act of moral protest on behalf of the victims of such actions. Alaimo argues that a material ecocriticism should focus on 'intra-active systems and entanglements rather than the contemplation of isolated objects' (192), endorsing campaigns that make direct links between personal locales and the state of the ocean. The ethical aspect of trans-corporeality is, correspondingly, a deeper sense of how our own bodily existence, our 'consumption of food, fuel, and specific consumer products' (193), has an impact on the ecologies of the ocean.

Trans-corporeality marks another of the most striking papers in the collection. Dana Phillips's 'Excremental Ecocriticism and the

Global Sanitation Crisis' (*Material Ecocriticism*, 172–85) is another essay that keeps a direct focus on one material issue. The topic is human waste, or shit as Phillips bluntly calls it. The topic defies earlier forms of ecocriticism that would rather celebrate wilderness and greenery than the realities of urban environments, the ecologies of human shit. This is material agency with a vengeance, what with the slum cities in the Global South being 'ringed by "stinking mountains of shit" and other garbage' (Mike Davis, *Planet of Slums*, quoted by Phillips, 181). As a vector of disease, and as something that easily becomes effluent or which can dry into a fine airborne dust, shit is insidious and hard to control or contain.

Phillips mocks texts and arguments that downplay the crude materiality of excrement by overstressing the psychic/discursive aspects of the topic. He refers to 'The usual story about the flush toilet and Victorian repression' (179), meaning arguments that the invention of the flush toilet should primarily be read as a symptom of psychic or cultural 'repression' in the acknowledgement of this aspect of life (analogous to arguments about the repression of the facts of sexuality (185)). Phillips gives as an instance of such evasive readings Warwick Anderson's account of American colonial attitudes to people in the Philippines during the 1898 US war with Spain, the vilifying of people's need to defecate in the fields: 'shit's stubbornly repellent nature ... is something ... Anderson treats as if it were a figment of the bourgeois imagination, as if the bourgeois had no direct experience with the thing itself' (177).

This last phrase, however ('direct experience with the thing itself'), underlines a problem both in Phillips's essay considered as a piece of environmental literary criticism, and for some other work done under the broad material ecocriticism heading. After a survey of the topic of repression and/of excrement in Thomas Pynchon's *Gravity's Rainbow* (1973),²¹ Phillips finds he has to turn away from considering a fictional work altogether:

given its strategy of simultaneous representation and misrepresentation, of mixing the literal or at least the plausible

with the fictional, fantastic, metaphorical, symbolic, and stereotypical, the novel may be a form with which an excremental ecocriticism is not going to be able to traffic profitably, not if it is to be as materialist as it needs to be. This is one of the reasons I turn to a work of nonfiction in the fourth section and a book-length poem (one that largely eschews the metaphorical and symbolic) in my conclusion. (175)

This is a surprising statement from a literary critic. The need to eschew the 'fictional, fantastic, metaphorical, symbolic, and stereotypical' suggests an odd constraint on this particular variety of material ecocritical argument. The essays by Phillips and Alaimo, and many others in the *Material Ecocriticism* collection, focus on works of nonfiction, popular science and history. The implication of this focus, however, is a latent difficulty in taking on texts without fairly straightforward forms of literal reference, with features such as literariness, metaphor or the fictional.

If shit is waste that cannot easily be turned into something meaningful or useful, then its appearance in literature, always in the service of some meaning or other, or as a scatological or satirical trope, is precisely the kind of thing Phillips admits is hard to engage in his 'materialist' essay. How could he deal with, for instance, scatological literature such as famous texts by Geoffrey Chaucer (*The Miller's Tale*) or John Dryden (*MacFlecknoe*). All but one of the printed texts discussed by Alaimo are works of nonfiction about the sea (the one 'literary text' is a comic song of a story of a plastic bag). Her approach is also entirely thematic, describing various actions of protest and sorts of installation art directly about ocean plastic. In fact, a notable feature of material ecocriticism is its privileging of kinds of installation art, i.e. material things that occupy real space and time. Is this also a sign of an unacknowledged difficulty at times with the categories of the literary and fictional?

One might instead expect that work stressing the agency of material things in a literary context would be in fact inclined to celebrate kinds of myth and magic realism, that is, modes of representation

that dramatise agency and power in non-human entities – demons, magical objects, fairies, gods, or non-human animals that can speak, all of them granted varying degrees of agency, voice, personhood, variously anthropomorphised or not. All these tropes would seem to challenge the falsely anthropocentric in art and literature. Such literary features, if a problem for Alaimo and Phillips, do indeed characterise other work that fits the material ecocriticism heading. Such an approach has already been seen in Adamson's reaffirmation of some Native American myths. Sexton's 'Anthropocene' reading of Yamashita's *Orange* might also be a relevant example here. Without making direct reference to material ecocriticism, it demonstrates how the 'novel makes use of science fiction and magical events to make the invisible material foundations and the excluded communities of Los Angeles newly visible' (24). A renewed sense of the materiality of the human body, its animality and vulnerability, has also been influential in thinking about the nature of theatre, taking performance studies beyond the normal references to the personal and social.²²

An argument in Bennett's *Vital Matter* seems to avoid the difficulties just traced in Phillips and Alaimo. Let us turn back to her account of the 'assemblage' of material forces at work in the failure of the North American power grid: 'a volatile mix of coal, sweat, electromagnetic fields, computer programs, electron streams, profit motives, heat, lifestyles, nuclear fuel, plastic, fantasies of mastery' (25). Bennett's list includes such superficially non-material elements as 'profit motives' and 'fantasies of mastery'. Latent here is an element of material ecocriticism that is still relatively undeveloped, the issue of how texts and attitudes can also be considered 'material' agents. Clearly, Bennett's list must embrace any part of the 'assemblage' of the power grid that has an effect on other parts, and this makes human attitudes and motives a 'force' along with other 'forces'. If a material agent is defined simply in that it has a material effect of some kind, then literary and other texts, and ecocritical arguments themselves can all be drawn in as part of a material assemblage of some sort.

Someone who does just this is David Higgins, in his study of the Tambora catastrophe of 1815, *British Romanticism, Climate*

Change, and the Anthropocene: Writing Tambora (2017).²³ This was a devastating volcanic explosion on the island of Sumbawa that killed thousands of people in the Indonesian archipelago, while atmospheric ash affected the global climate for some time. It led to the so-called year without a summer of 1816, known to have been a huge influence on texts by P. B. Shelley and Lord Byron at this time, as well as on the genesis of Mary Shelley's novel *Frankenstein* (1818). The strength of Higgins's book is that the multiplicity of discursive and material factors in the Tambora catastrophe is made legible in its full complexity and imbrication by close and detailed scholarship of all aspects of its material and textual footprint.

Higgins writes:

My approach builds on recent work in 'material ecocriticism', which emphasises the 'constitutive engagement of human discursive systems with the material world'. The composition of eyewitness accounts of the eruption and its effects put together under the auspices of Sir Stamford Raffles [founder of Singapore] tells us much about Tambora's material processes and has therefore been of great value to volcanologists. Similarly, the 1816 writings of the Diodati Circle [of the Shelleys and Lord Byron] tell us much about the weather conditions of 1816 and their social effects. However, more noteworthy from a humanities perspective is the complexity with which these sources mediate human-material entanglements: a complexity which is best apprehended through attentiveness to textual detail and ambivalence. (4)

This mode of reading could be seen as an ecocritical development of the traditional practice of reading a text in relation to its historical context: it includes the precise political circumstances of the time, such as the escape of Napoleon from captivity and the collapse of the treaty that would have seen Java return to Dutch colonial control. However, its central focus on the physical explosion and on geographical contingencies and their human mediation provides a fuller

context, making up an 'assemblage' in Bennett's sense of 'human-material' entanglements. Higgins's close attention to the effects of material and geographic contingency differentiates his work from Gidal's otherwise comparable study of Ossian, which used geological terms primarily as metaphors for human, cultural issues.

Higgins is attentive to the way various kinds of texts and genres project different kinds of relationship between writer and subject. For instance, Raffles's would-be objective report, designed to express a composed imperial overview, is traced in its appropriations of the 'superstitious' interpretations of the eruption from native people, recontextualised in the report to the status of witnesses to merely physical events. Parts of Raffles's text function a little differently again when reproduced in part in his *History of Java*, and then again in a memoir of Raffles compiled by his widow.

To reconstitute an 'assemblage' is thus, ideally, a meticulous reconstruction of the empirical *and* discursive plurality of an event. In many ways, this work is not very different from historically contextualising literary criticism at its best. What differentiates it is its philosophical frame. For a traditional contextual reading would reconstruct the precise social, political and cultural context of a work or an act, often attentive to issues of human equity and justice, both in events and their written representation. Higgins moves beyond, or at least qualifies, such traditional historicism by rejecting its lingering anthropocentrism, and affirming the way the assemblages at issue contain decisive factors which have no meaning or agenda in human terms, such as the Tambora explosion.

THE PROLIFERATION OF NARRATIVES

Material ecocritics make broad use of the term 'narrative', as well as 'storied' and 'creative', to emphasise the way material entities and non-human factors produce coherent lines of events and effects, lines of consequence that can be traced as having their own logic, irrespective of human purposes or use. There is a striking contrast here with arguments from Vermeulen and others that the Anthropocene

in its complexity represents a crisis for the very concept and applicability of narrative, so this issue needs to be given some space here.

Let us turn first to an essay in which use of such terms is given convincing justification. Timothy Morton deploys the term 'storied' carefully to name materiality as a realm of emergent relationships. His 'The Liminal Space Between Things: *Epiphany and the Physical*' (in *Material Ecocriticism*, 269–79) considers a large art installation by James Turrell, *Twilight Epiphany*, situated in Rice, Texas. Turrell is an artist who works with light media, and *Twilight Epiphany* is a very large sculptural or architectural object, a 'truncated pyramid' on whose top is situated, on slender supports, a large metal square. In the centre of the square is situated a smaller one, open to the sky. Viewers can climb stairs up the pyramid to sit beneath the smaller square of sky. Here the use of artificial light effects, controlled by computer, and the changes of natural light enable people to experience a new sense of the relatedness of earth, sky and the material of the artwork.

Morton reads *Twilight Epiphany* to illustrate and defend a notion of art as a particularly forceful instance of the agency of non-human things. It is the power of an art installation like *Twilight Epiphany* to make perceptible the relations, or 'conversations', between object and surroundings, the coming into appearance and passing of different textures and tone. Such a making apparent of relationships through the artwork is not as a theme for representation but as a phenomenal event, an 'epiphany': 'agency is on the side of the thing, by which is meant the nonhuman side' (273). Morton uses the religious term 'epiphany' to name that emergent novelty which things around us exhibit at their most surprising, exciting or frightening, their life of their own, anterior to human conceptions or thoughts: 'But an epiphany comes from the beyond, from the not-me: it is precisely something I do not impose' (273).

Morton's account of Turrell's installation folds into a broader argument on the nature of things and materiality more generally. Morton's stance is anti-reductionist, that is, against the prevalent drive or argument in Western thinking to argue that some entities are more basic than others, and that the task of thought and investigation is to reduce things around us to being only the outer appearance

of more fundamental entities – that, for example, only things which can be permanently and repeatedly ascertained, consistently present to perception, are real:

This metaphysics of presence is what underlies ontotheology – to take one thing as more real than another thing is to say that to be real, a thing should be constantly present. Yet a forest clearing or a storm cloud or a climate system is not constantly present in an obvious way. Yet each exists. (278)

Twilight Epiphany is valuable for the force with which it resists reductionist arguments: emergent, it is plainly not more truly described as just a combination of metal components and programmed light effects.²⁴

The notion of materiality and its agency at work in Morton's essay is philosophically informed. Like other material ecocritics his work endorses Karen Barad's 'agential realism', an anti-individualistic argument that 'intra-action' precedes and is a condition for the existence of distinct entities or things – the entities do not pre-exist the relations, they emerge out of them. The material is *as* this realm of flux, of determining interrelationships and emergence which an installation like Turrell's both reveals and exploits:

An installation by James Turrell does not reduce to squares of metal and algorithms that produce light. The installation is its own unique being, just as a clearing in a forest is a kind of being, though we could see it as reduced, that is, as 'nothing but' an assemblage of trees, sky, air, and grass. (276)

Thus, all 'Things are a kind of liminal space made of other things' (279). This is also a defence of art as the making apparent of this space. 'Art happens in and as this liminal space, this *between*, which is just what a thing is: a meeting place of other beings ("thing" is Old English for "meeting place")' (279).

Morton's essay on *Twilight Epiphany* gestures toward other essays in the *Material Ecocriticism* collection by picking up the term 'storied'. Here it is used, quite warily, simply to describe the latent or the past relations or sequences of events that have made something what it is, or which it may itself bring about in the future. If ecological awareness is an awareness of relationships, it is also, in a sense, the seeing of all things as 'what this volume calls *storied matter*':

When we look at a plank of wood, we are seeing a story about something that happened to a tree in a relationship between humans, saws, and trees. When we look at a tree we are seeing a story about something that happened to the genome of a tree unfolding in a certain environment: soil, microbes, birds, squirrel. Examine the genome, we see a story about coexisting viral code ... [etc.] (275)

'A molecule is a story about atoms' (275). If things ultimately *are* their interrelations (also a tenet of Morton's 'queer ecology'),²⁵ then all things are 'storied'. This is a realignment of a term ('story') usually confined to human cultures. The universe, in this sense, would be a cornucopia of 'narratives', most of them non-human.

This usage of 'narrative' is both far broader and vaguer than Vermeulen's argument with 'narrative' in the sense of a limited tool of human representation. Morton means to affirm that a world of matter is not inert, but one of 'creative materiality', i.e. 'storied' in ways that enable the critics to read and endorse its plural 'narrative agency',²⁶ undoing the (supposed) assumption that human beings alone have significant agency.

AGAINST MATERIAL ECOCRITICISM?

Exciting individual essays have appeared under the broad heading of material ecocriticism, such as those already mentioned. Other work, however, can seem intellectually fragile. This relates in

particular to the definitive claim of this loose school. Maris Sörmus introduces a material ecocritical reading of a novel by reiterating a central tenet: 'Centrally important is the idea that matter possesses agency: that it both acts and causes changes.'²⁷ Jane Bennett, whose book *Vibrant Matter* is a leading influence, makes a similar manifesto-type claim about reaffirming the 'vitality' of matter:

By 'vitality' I mean the capacity of things – edibles, commodities, storms, metals – not only to impede or block the will and designs of humans but also to act as quasi agents or forces with trajectories, propensities, or tendencies of their own. (viii)

It is hard, however, to see what is radical or new about so obvious a claim. Ever since someone dodged a falling branch or built a wall, it has been obvious that material objects *do* things, *change* things, have 'tendencies of their own', and *have agency* in a basic, widely used sense of the word. The whole history of physics and the engineering sciences is testimony to this. An online dictionary definition of 'agency' reads: 'action or intervention producing a particular effect', citing as an instance of the word's use, 'canals carved by the agency of running water'.²⁸

How would a material ecocritical approach deal with the objection that it is *simply not true* to claim that 'agency ... is usually considered to be a human attribute' (Sörmus, 45)?

Various material ecocritical essays draw on speculative physics to build up new philosophies on the agency of matter. Yet, whatever the merits of such arguments *per se*, are they not being deployed against a heavily caricatured antagonist? The assertion that there has been a widespread assumption of the passivity of matter now seems to circulate as mechanically as the false statement that the steam engine was invented in 1784.

For instance, the introduction to *New Materialisms* affirms, in order to refute the supposedly widespread mistake of seeing matter as passive: 'Instead, the human species is being relocated within a natural environment whose material forces themselves manifest

certain agentic capacities and in which the domain of unintended or unanticipated effects is considerably broadened' (Coole and Frost, 10). Surely this sentence is again restating the obvious: we all know, many people only too well, that natural environments 'manifest certain agentic capacities' (e.g. that a river can flood, block roads, cause disease or worse), and with 'unintended or unanticipated effects'. Such reminders from Western ecocritics that nature is an agent must read as incongruous to many people across the world, for whom nature is a daily, arduous opponent in the struggle for food and basic needs.²⁹

What is the source of the claim of a widespread fallacy about the passivity of matter? In material ecocritical essays the notion is referenced, not to engineers and chemists, who would be baffled by it, but to relatively abstruse traditions of Western metaphysics, looking to Aristotle (on *hyle* as inanimate matter, subordinate to the determinations of 'form') or to how Descartes and Kant asserted a strong division in modes of being between the mind and the object world. In effect, arguments in an anthropocentric tradition of foundational metaphysics, about what matter ultimately is, are being engaged by critics as if they were an immediate account of material things as encountered in daily experience. None of these philosophers referenced would be remotely surprised to hear that humans live 'within a natural environment whose material forces themselves manifest certain agentic capacities'. This statement of the obvious from *New Materialisms* dubiously reads an empirical fact (that things do things) as refuting an imputed, bizarre metaphysical fallacy that things cannot do anything. The real issue in such claims about some widespread fallacy of the passivity of matter must be the hubristic anthropocentric assumption that humanity *can or should* command non-human entities. It is this that is read as directly having 'destructive practical consequences' (Opperman).³⁰

The New Materialism affirms how matter shows 'certain agentic capacities ... in which the domain of unintended or unanticipated effects is considerably broadened' (10). The inference is that previous assumptions about the material world underestimated its complexity and overestimated its susceptibility to control. The so-called Anthropocene is the proliferation and becoming more incalculable of

many such effects, and it is here, in this engagement with complexity, with things having their own 'narratives', that 'material ecocriticism' may find some justification for its exaggerated self-image.

The force of work such as Higgins's readings of the Tambora explosion is to undermine an excessive anthropocentrism in inherited modes of cultural criticism, qualifying its sense of historical contexts by incorporating due reference to non-human events and contingencies. However, in other critical readings such recastings of context can seem merely obvious/empty. For instance, Lowell Duckert's essay 'When it Rains' contains an account of a seventeenth-century French traveller in Bengal, François Bernier, seeing a lunar rainbow, and alerting other members of his company to admire it. We read, 'His decision to awaken the company and share his experience with the rain is a powerful moment of collaboration made between rain, light, and human (to name just a few participants).'31 Duckert's sentence merely restates Bernier's experience in terms that highlight a vague metaphysic of interconnectedness.

Morton's work on Turrell makes a forceful redeployment of notions of 'narrative' and 'story'. In other thinkers, however, there is more danger of the terms drifting towards an insipid anthropomorphism. For instance, Duckert talks of 'hearing the rain on our rooftops, feeling it on our bodies, and listening to the stories' (128). In Jerome Cohen's essay in *Prismatic Ecologies*, we read of the Mississippi river that 'An intimate of the restless glaciations of the Laurentide ice sheet, the Mississippi is an earth artist, but its projects take so long to execute that humans have a difficult time discerning their genius' (xix). A reader's possible discomfort with the language of this description (its seeming 'animism') is taken up later in Cohen's same introduction with the hypothetical riposte – 'what is at stake in limiting agency to an origin in human volition – as if we intend much of what we accomplish?' (xxiv). However, this rejoinder only makes sense against the false premise about agency: one can speak in normal English of a river 'flowing', 'flooding', 'carving out a channel' and doing all sort of things, that is, having agency, without it also simultaneously being an artist or having projects, things that entail both planning and a desire to communicate. The fact that agency is distributed in a

network of human and non-human factors, and that this reconfigures certain conceptual boundaries, does not justify the kind of meltdown of distinctions which the sentence about the Mississippi represents.

Such laxness could, ironically, suggest a kind of post-human reading of the emergence of material ecocriticism itself, one in tune with a stress on the primacy of material and technical relations in human self-conceptions. It would ask: is the grounding claim of material ecocriticism, that of a widespread Western presumption of the passivity of matter, a fallacy, and one that could only be concocted by thinkers leading very secure lives within 'advanced' infrastructures, where water, energy, shelter and food are all in abundant, convenient supply?

MATERIAL ECOCRITICISM AS A MODE OF ACTIVISM?

As a form of intellectual activism, material ecocriticism contributes to the traditional ecocritical project of working to alter the 'cultural imaginary'. The hope is that by changing the way people conceptualise what matter is, we might start to qualify destructive and anthropocentric modes of thought. However, material ecocriticism also instantiates a danger to which ecocriticism has always been prone as a discourse, largely, of the Western academy: that is, mistaking what is primarily an academic politics for something more significant.

Despite its claims about materiality, is some material ecocriticism committing a fallacy to which much academic life is prone: that of ascribing most problems and ills of the world to some sort of intellectual mistake or set of false assumptions, as if all human society were an academic seminar writ large? For instance, Oppermann's introduction to *Material Ecocriticism* endorses 'ecological postmodernism' in contesting:

the Cartesian model of rationalism with its mind-matter dualism, its modernist legacy of subject-object splits, and its social, cultural, and linguistic models of constructivism. Ecological postmodernists

aver that at a fundamental level, dualist models define the basic constituents of nature as objects that 'are devoid of all experience, intrinsic value, internal purpose, and internal relations' [David Ray Griffin]. (22)

This risks badly over-intellectualising the issues behind human over-exploitation of the natural world, and caricaturing as an academic problem what is more truly and intractably a political, social, psychological and ecological one.³² Would the exploitation of nature really come to an end if (supposedly) different theories of the agency of matter were to become more common?

The determining context for material ecocriticism remains that of a primarily academic politics. By using terms such as 'conversations', etc. in relation to rivers, fields, etc., material ecocritics are covertly staking a claim for the centrality of a humanities discipline and its terms to the study of the environment. Academic politics is also apparent in the way material ecocriticism was introduced over a few years by a series of exaggerated manifesto-type essays, texts whose shrill tone exemplifies the competitive institutional culture of the modern Western university. This aspect of material ecocriticism could even form a case study as to how that academic context of league tables, 'esteem indicators', publication and citation lists may have intellectually damaging consequences. For, while 'material ecocriticism' has been forming a loose and useful frame for new ecocritical work, some of it also fits a template which the editors of the collection *Theory Aside* see as characterising 'theory' at its weakest as a form of grandstanding. Characteristics include a fetishising of 'newness' and the desire of thinkers always to locate themselves on the frontlines of some supposedly 'unprecedented intellectual transformation', along with an investment in the caricature picture of intellectual life as a series of dramatic, 'radical' paradigm shifts, with each new movement instantly positing its predecessors as symptomatic of some widespread, politically suspect misconception, now boldly unmasked.³³

It would be unfair, however, to end a survey of material ecocriticism only by underlining its problematic domination by

Western academic politics. At its best, in work by Alaimo, Phillips, Higgins and others, it has broadened the scope of critical readings in ways that break strongly from the traditional anthropocentrism of literary criticism. Even at its weakest, submitting inherited conceptions of agency and artistry to dubious intellectual contortions, it exemplifies, like Macfarlane's weird neologisms, the kinds of unprecedented pressures now being embodied in concepts of an Anthropocene.

INHUMANISM AND MATERIAL ECOCRITICISM

This chapter turns finally to a movement in environmental thinking that, while seeming at first closely allied with material ecocriticism, is also critical of it. Some passages of Claire Colebrook's argument in *Death of the Posthuman: Essays on Extinction* (2014)³⁴ sound at first much like a programme of material ecocriticism. For example, in a passage affirming the unpredictable materiality of water, beyond its use as a human resource, Colebrook writes of the contemporary composer Sebastian Currier's 2008 experimental work *Next Atlantis*, an elegy for a future drowned New Orleans:

Here, sounds of water (which have been electronically synthesized, becoming almost melodic) are interspersed with sounds from the string quartet, which take on the quality of 'becoming-water'. At once the most formed and mannered of genres, the string quartet enters into relation *not* with the forces of the earth as territory (where water, say, is a humanized, nationalized quality) but with the cosmic force of water – its capacity to enter into variation and bear a sonic power beyond that of the polity. (114)

The point here, however, is not to describe water as having its own non-human 'narratives' and 'creativity', but that such sounds suggest a materiality outside 'meaning' and 'narrative' altogether (here

acknowledged as human-made categories), and refusing recuperation as any sort of expression, whether of human or non-human life.

Material ecocriticism, by contrast, is seen as a form of what Colebrook nicknames '*ultrahumanism*'. This attributes 'all the qualities once assigned to man – qualities such as mindfulness, connectedness, self-organizing dynamism – to some supposedly benevolent life in general that needs to be saved from the death of merely calculative systems' (162).

The implicit criticism here of material ecocriticism and elements of the New Materialism would be that their strategic use of anthropomorphism (describing matter as 'creative', as possessing 'narratives' and so on), even when seeming to extend these terms in provocative ways beyond an exclusively human use, still comprises a way of moulding 'all elements and forces into *what they mean for "us"*' (115, emphasis added). Notions of 'meaning', 'significance' 'narrative', etc. are not really made problematic in this kind of work, only their scope expanded beyond any exclusively human reference. The old Romantic project of a retrieval of a supposed 'meaning' in nature remains, but now as a retrieval of a supposedly truer, chastened sense of the human, understood not as sovereign or sole agent but as an embedded part of larger living systems (53–4). Hence it is that sacrificing notions of human sovereignty 'in favour of a posthuman ecology of systems allows [a certain uncritical view of] the humanities to live on' (163), that is, 'a world of meaning, sociality and readability yet without any sense of the disjunction, gap or limits of the human', 'an anthropomorphic life of meaning and readability' (164).

Colebrook's point may highlight how material ecocriticism instantiates what is currently the central intellectual and moral tension in environmental criticism more widely. There is an implicit conflict between its allegiance to the dominant ecocritical commitment that the ultimate causes of environmental degradation lie in the effects of human to human wrong, and forms of post-humanism which argue how deeply the 'human' must see itself as only one organism among others, enmeshed in multiple forms of non-human agency, and refusing illusions of autonomy, sovereignty and human exceptionalism – a stance which must complicate

or qualify the drive to ascribe blame and responsibility to human agency alone. Material ecocriticism affirms a version of such post-humanism, while yet still striving to maintain a general politics and ethics inflected by traditions of libertarian humanism, immersed in the terminology of a civil rights culture with its norms of respect for personal or communal autonomy and individuality, notions which post-humanist arguments yet effectively undermine. Such tension, and the work of more extreme inhumanist thinkers like Colebrook, might suggest that we should see material ecocriticism and elements of the New Materialism as something of an intellectual makeshift, an ethical halfway house, eager to disperse seemingly independent 'human' actions into a network of contingencies and non-human factors, but still striving to articulate what this might mean for rethinking notions of human responsibility, equity or respect.

The cold dividing line between a would-be posthuman material ecocriticism and Colebrook's kind of inhumanism is that the first still works in the service of an ethic that the latter refuses, that of the 'ecological' as a moral term, a chastening reminder of human finitude, one that may be finally redemptive in instigating fundamental changes in many human attitudes and behaviours. Colebrook's inhumanism, however, reads horrors such as the plastic infestation and acidification of the ocean as confirmation of a depersonalising view of the human as inherently destructive.

Vermeulen's study of dystopian novels shows how an inhumanist perspective can alter the way we read.³⁵ His focus is on the device of an imagined posthumous narrator looking back in retrospect at the events of a now extinct civilisation, as in Oreskes and Conway's *The Collapse of Western Civilization*, or Max Brooks's *World War Z: An Oral History of the Zombie War* (2006).³⁶ Vermeulen is interested in the double effect of this retrospective stance. On the one hand, as in many a dystopian novel, it is clearly meant as a spur to action and to a sense of responsibility in the present. This moral purpose, however, is in ironic tension with the way anticipated images of human lives and societies as *already extinct* necessarily projects them as a merely material phenomenon, 'a spent geological force akin to volcanoes, oceans, and carbon'. 'Even as it is narrating

itself into significance, human life, in the Anthropocene, simultaneously seems to be training itself into a realisation that it will “one day be perceived as nothing more than a geological scar” [Colebrook]’ (879). The Earth ‘after us’ is not only an Earth ‘after human meaning’ so to speak, but the proleptic stance of taking current life as a merely geological trace already empties it of human meaning in the present.

This is a view that some might call ‘nihilistic’, though it would only truly be so if, among all living things, humans were the sole source of value. Colebrook’s inhumanism leads to a kind of philosophically informed misanthropy.

What if all the current counter-Cartesian, post-Cartesian or anti-Cartesian figures of living systems (along with a living order that is one interconnected and complex mesh) were a way of avoiding the extent to which man is a theoretical animal, a myopically and malevolently self-enclosed machine whose world he will always view as present for his own edification?³⁷

Alaimo quotes this passage and admits to feeling stung as to how clearly her own kind of work is its target.³⁸ She expresses the hope that Colebrook is writing of ‘man’ as the human male, not the human more generally: ‘I wonder if, as a feminist, her use of “man” here intentionally allows for the possibility that feminist theories may somehow depart from the modes of thought produced by “man” as “a myopically and malevolently self-enclosed machine”’ (159). Alaimo is striving, unconvincingly, to bring the issues back into the home territory, so to speak, of mainstream ecocriticism, with its commitment to interpreting environmental violence as ultimately traceable to issues of civic justice, and hence capable of being changed. However, also implicit in Alaimo’s discomfort is the sense that Colebrook’s argument must lead too easily to a kind of fatalism or defeatism, in the face of a multiplicity of continuing human, animal and environmental evils.

6 'Postcolonial Ecocriticism' . . . and Beyond?

Thirty years ago, ecocriticism was an infant tendency mainly visible in American studies, celebrating a national tradition of environmentalist nonfiction and British Romantic poetry. Now ecocriticism is a global academic phenomenon, studying multiple texts in innumerable regions. The past ten, even just the past five years, have seen an explosion of studies from all corners of the globe. Recent years have seen ecocritical overviews of, among others, Chilean, Indian, African and East Asian literature, and Brazilian poetry and art.¹ Ecocritical arguments, coming now from so many cultures, may develop into a newly global cosmopolitan discourse and intellectual movement. At the same time, this daunting plurality is in part managed, and to a degree evaded, by the fact that most ecocritical work across borders concerns the now global genre of the novel, often practised as a hybrid mode of writing in which originally Western forces of modernisation interact with more local forms of cultural adaptation or resistance.²

The story of ecocriticism since its inception has been one of a gradual and still unfinished cultural decolonisation, or even de-Americanisation, of older norms of 'nature' or the 'human'. Any lingering strains of Western Romanticism in ecocritical work become finally dispersed: ecocriticism is no longer limited by a focus on implausibly idealised conceptions of the local-as-authentic, or of the purely 'untouched' wild or 'natural' as opposed to inhabited or urban spaces, or notions of 'nature' as a catalyst for finding some lost, truer humanity. Ecocriticism has been responding to the near impossible challenge formed by just how globally varied and contentious notions of 'nature' and the 'environmental' are.

What of the concomitant rise of so-called postcolonial ecocriticism? Arguably, the rise of debate on a global 'Anthropocene'

must now render all ecocriticism 'postcolonial' in a broad sense, as the economic systems and lifestyle of any 'developed' country necessarily impinge on the material contexts of all other parts of the world. This survey has already drawn in texts that would conventionally be considered 'postcolonial', Sinha's *Animal's World*, Brathwaite's 'Namsetoura' poems, Habila's *Oil on Water*, and so on. This last chapter will finally consider whether 'postcolonial ecocriticism' is becoming less useful as a separate category and what might replace it as a possible, if still rather modish-sounding, 'Anthropocene criticism'.

The distinguishing mark of 'postcolonial environmentalism' has always been its focus on environmental injustice, on an 'environmentalism of the poor', on people being deprived of healthy living conditions by the forces of internal or external colonisation and exploitation, of migrants being driven into urban slums by the loss of the forests or wetlands that once sustained them. This focus on (human) environmental injustice contrasts strongly with a purely bio-centric stance, such as that of the so-called deep ecologists who stress the equal ethical value of all living things. Such a stance, according to George Handley, is an argument that has too frequently failed to redress the plight of the poor and to address the ways in which social and environmental ills often cause and exacerbate each other. Slavery's evils were social *and* environmental – the recent floods in Haiti were caused by heavy rainfall, yes, but even more by the political and economic forces that have perpetuated the extensive deforestation begun by slavery; destitute descendants of slaves are forced to rely on wood for fuel and thus continue to find their hold on their sense of place slipping away. 'The consequences of natural events are often distributed according to the tragedies of human oppression and poverty' (Handley).³

The Anthropocene, though often presented as highlighting the human as a species in general, is hardly the context for overlooking grave disparities in economic and cultural power. Such imbalances determine the nature of green activism and advocacy across the globe. Rob Nixon has highlighted the intercultural tensions that inflect the stance of three well-known environmental activists in what Western capitalism used to call, disparagingly, 'the developing world',

Arundhati Roy in India, Wangari Maathai in Kenya and Ken Saro-Wiwa in Nigeria. Each wrote or writes an 'activist nonfiction',⁴ doing so in English, following the conventions of genres such as the essay, polemic, memoir or of investigative journalism. Such nonfiction has the immense advantage of being a nascently international and metropolitan kind of writing, aimed simultaneously at local government, concerned compatriots (at least with literacy in English) and a wider international readership. Its relative ease of legibility contrasts with the plurality of literary genres, stories, poems, chants, dance-lyrics, legends, myth, etc. that characterise the multiple local cultures of the Earth. In fact, since the early nineteenth century the main impetus to environmental activism across the world has tended to come from nonfictional texts which owe their influence 'on account of their ideas rather than their aesthetic merit' (Ursula Heise).⁵

Nixon takes up some drawbacks of recent 'activist nonfiction'. He writes: 'For Maathai, as for [Nelson] Mandela, the single-authored movement memoir raises profound representational dilemmas intricately entangled with transnational power imbalances in the publishing industry – entangled, too, with the genre expectations of projected readers, who reside mostly in the global North' (143). This can be illustrated by Maathai's memoir *Unbowed: One Woman's Story* (2007).⁶ It is an inspiring account of childhood in rural Kenya, her education, a growing political consciousness and her bravery in opposing in Kenya a sexist and environmentally destructive dictatorship. Yet Maathai's prose is also couched in individualistic terms reminiscent of primarily Western modes of thought. What were in fact communal movements in which Maathai played a significant role (the Green Belt Movement, The National Council of Women of Kenya) come to seem the achievements of a personal heroism, transforming 'at every turn, her selfhood into forms amenable to her largely American audience' (Nixon, 144).

This telling point suggests just how much that is politically decisive in these texts does not actually appear within them, but is a matter of infrastructural contexts, access to viable communication technologies, the financial power of publishers and the cultural assumptions of intended readerships. It is ironic that people who have

experienced persecution in fighting for environmental justice should achieve a widely recognised voice only when given, so to speak, an overfamiliar North American accent.

One of the structural traps that has weakened postcolonial ecocriticism in the past was to celebrate people who have become victims of environmental degradation in terms that were themselves a form of Western fantasy – of some lost idyllic precolonial society living in a state of implausibly assured 'harmony' with their natural environments. These false versions of pastoral may have made it easier for some to defend 'indigenous' people in some contexts, but at the unacceptable cost of drowning out their own voices and complex histories. Donna Haraway warns of the 'cannibalistic western logic that readily constructs other cultural possibilities as resources for western needs and actions'.⁷ Such moral simplifications also evade the intense degree to which many in the 'Global South' are complicit with environmental destruction. One cannot polarise into good and bad what is really a grey and uncertain gradation between victimhood and complicity, passive acquiescence and active cooperation in unsustainable forms of exploitation. Jyotirmaya Tripathy writes of the Dongaria Kandha tribes of the Odisha region of eastern India:

While it is easy to question [a] state's idea of progress or development, what is elided is the question of authenticity and representation. It is more or less taken for granted that it is the anti-industry group which is the authentic representative of Dongaria Kandhas because they conform to our preconceived idea of a tribal. When the state or company represent pro-project activists as authentic tribals, NGOs and other environmental groups dismiss them as a small faction.⁸

Acknowledging such complexity also heightens the question of how far the term '*postcolonial*' ecocriticism is likely to remain appropriate in the future. China, the world's leading source of polluting carbon emissions, among other grim records, is not a former colony in the first place, albeit that China is ready to use the terms of its lingering

'third world' status to fend off international critics with rhetoric about 'development' and 'sovereignty'. The term 'postcolonial' risks being misleading in directing attention from the complex internal politics of many countries, where ruling elites are now effectively continuing and often accelerating practices of former colonial powers. Tripathy observes that the postcolonial states themselves – India is his specific example – often sanction 'the plunder of [their] hills, rivers and forests to satisfy increasing resource needs' (72) in a quest for 'development', for modernisation or 'catching-up'. Such programmes often exacerbate internal injustices, both environmental and economic. As a result, environmental activism in the postcolonial state is in fact often a plural and not necessarily self-consistent matter, mediated through differences of caste, class or gender.

The case of South Africa, the focus for much of the rest of this chapter, illustrates in its singular way the growing moral and environmental complexity of the 'postcolonial'/'neo-colonial'. Caminero-Santangelo gives a forceful comparison of two novels set in South Africa thirty years apart, before and after the collapse of the apartheid system of government there (111–32). These are Nadine Gordimer's *The Conservationist* (1974) and *Get a Life* (2005).⁹ *The Conservationist* depicts a self-styled conservationist called Mehring who is in fact a rich white industrialist, managing a kind of hobby farm in terms that help prop up a certain flattering image of himself as a responsible steward of nature. Mehring's would-be self-image, informed by smidgens of popular ecology, clearly works as a self-serving line of demarcation between himself and the black population around him, whom he pictures as in need of environmental education.

In Gordimer's 2005 novel, *Get a Life*, the focus is on another white bourgeois character, the far more sympathetic Paul Bannerman. Here, matters of moral and political judgment are more complicated, as are the kinds of virtue ethic that inform and motivate Bannerman's work as a professional ecologist. Anthony Vital writes:

Bannerman's thinking is in accord with a changed evaluation of conservation in South Africa. No longer viewed as the

preoccupation of an elite rooted in a colonial past, the natural environment becomes with the political changes circa 1990 a concern across social sectors, from wealthy to impoverished, and after 1994 a cause as well for the national government at ministerial level.¹⁰

The prominence given to ecology in the novel is heavily contextualised. *Get a Life* is mostly about the vicissitudes, relationships and worries of a prosperous white family in modern South Africa. For the first half of the novel, its central character lives in a kind of quarantine at his parents' house, having had radioactive treatment for thyroid cancer. His parents are also living through a time of renewed self-definition and self-understanding. The mother Lyndsay, a successful lawyer who is later promoted to serve on the constitutional court, has to cope both with the guilt of a past affair and then with her husband suddenly leaving her for a Norwegian guide met on a tour of Mexico's historical sights. Late in the novel she adopts a small black toddler, infected with HIV, who had been abandoned and raped as a baby.

Gordimer's novel stands out for a disconcertingly uneven tone and a moral and political stance that is peculiarly hard to fix. The uneasiness is felt in the slight incongruity of prose that gives detailed and seemingly empathetic attention to the subtleties of white bourgeois family relationships in a context that must also highlight this as a life of inherited privilege that is heavily guarded (at one point an intruder is found to have broken into the garden at night). The novel's free indirect discourse re-enacts the inner life and interpersonal tact of refined social contexts, with their restaurants cherished for their fine wine list, or areas graced with a late-night bookshop, the etiquette of dinner parties and of international holidays. This attention to subtleties of feeling and self-discovery in these characters, their small psychic epiphanies, may all seem slightly, but not fully, undercut by a reader's sense that the kind of novel which foregrounds such things is itself also a product of the kind of elite society it portrays, one in which high

culture merges too easily into a sort of consumerist lifestyle. It can also be uncomfortably evocative of the kind of structural hypocrisy in which much ecocriticism has been caught, as work taking place largely in educational institutions in the developed North, with their career and pay structures.

Paul Bannerman's stance on the natural world mixes professional ecology with terms that still carry over Romantic assumptions and the values of predominantly American ways of conceiving 'wilderness', a term even more problematic in South Africa than it is in North America. For him, the natural and the wild are experienced very much according to suburban psychic patterns as spaces of imagined therapeutic freedom from social and historical pressures ('when the wilderness received him he would believe the oncologists' guarded edict that he was all clear' (89)). 'Wilderness' is a supposed space of psychic self-realisation, of escape into a sense of the non-human as sublime. Bannerman is still working primarily within a dichotomy, of the (non-human) natural and (human) culture, whose coherence is very much a matter of pre-Anthropocene thinking. The Bannermans express no awareness of their energy use, their food consumption, etc. or the fact that a city is as much a part of natural cycles as the bush. Like many people in richer contexts, Paul Bannerman's environmentalism, for all his dedication and ecological expertise, is primarily a kind of identity politics, surreptitiously serving a felt need to be in-the-right in social contexts that might easily suggest otherwise, as with the far less attractive Mehring.

A 'POSTCOLONIAL ANTHROPOCENE'?

As we saw in the first chapter, the Anthropocene entails abandoning the idea of some kind of pristine 'nature' that might be restored or be preserved without intervention ('With climate change, reconstructing ecosystems by design will be the only way to save them' (Carl Jones)).¹¹ Even in large nature reserves, such as those of South Africa, distinctions between the domesticated and wild must become blurred. Yet, with his notions of the ecologically pristine, his

neglect of issues such as energy consumption and urban ecologies, Paul stands in denial of the way notions of hybridity, mobility, displacement and the complex identity dynamics of human diasporas (all strong features of postcolonial theory) now alter older environmental investments in notions of 'the local', 'home' or the ecologically 'native'.

The Anthropocene, as a striking generalisation of hybridity, displacement etc., raises anew the question of what environmentalism is for, especially in postcolonial contexts. This issue arises in Bannerman's relationship to other members of South African society. He is one of a group of colleagues actively opposed to development projects in Pondoland, an area in East Cape Province along the shores of the Indian Ocean. This environmentally valuable region is depicted as under threat both from a mining scheme being pushed by an Australian company and from South African government schemes for a toll road which would, among other things, help make such mining commercially viable. This scenario depicts a situation ubiquitous in postcolonial nations, in which objections to 'economic development' on environmental grounds are treated with suspicion by local governments as an ideology seeking to inhibit their material progress, even as such governments find themselves trapped in the iniquitous dynamics of international capitalism. The East Cape development seems set to go ahead, for the mining company has been wily enough to promise local people a 15 per cent share of the profits.

One of Bannerman's colleagues, Thapelo, a former victim of apartheid laws, is dramatised in self-debate, weighing the immediate possible benefit of the scheme, the share of profits, the chance the toll road that will lead to more jobs, against the damage to a unique ecosystem of sand dunes: 'Bring hi-fi systems and cars. Yes! Easy to sneer at materialism and its Agency seducers while existence within it has the luxury of dissatisfaction ... Who's to decide' (183).

The scenario depicted here by Gordimer could stand in for innumerable scenarios across the world in which local populations are bought or cajoled into environmentally destructive practices through the allure of escaping relative poverty or aspiring to more 'developed' lifestyles. Thus, developments which involve habitat destruction or

pollution are found to be acceptable in the short term – the only time frame many people are free to consider. The challenge 'of having to think of human agency over multiple and incommensurable scales at once' (Chakrabarty)¹² is superficially resolved by displacing environmental costs onto future human and non-human generations, and to places out of sight in other parts of the world.

Gordimer is a novelist whose central concern has been the crisis of authority. She highlights political and economic dilemmas confronting an environmentalist in modern South Africa, but subtly undercuts any too comfortable identification with Western green values or judgments. The title *Get a Life* seems satirical, but is unresolved in its target. Paul's mild sense of entrapment seems 'devised to place the central characters – and author – within a historical moment in which no imagined future offers strong critical purchase on the present',¹³ unlike earlier novels such as *The Conservationist*, where a future that had dispensed with the injustices of apartheid was always an implied overall moral perspective in the text.

Julián Jiménez Heffernan defends the disjunctive neo-modernist style of *Get A Life*, arguing that Gordimer is dramatising a context in which 'all claims to moral representativeness are doomed to failure. Gordimer is still speaking, but she no longer knows from where. This uncertain position may be described as a tragedy of point of view.'¹⁴

This kind of crisis of authority can be related to the way acknowledgement of an Anthropocene context adds a new twist to a long-recognised dilemma in postcolonial ecocriticism, that of the problem for critics of striving to defend traditional or 'indigenous' beliefs which they could never themselves take literally. Chakrabarty, in a 1997 text, observed how, if a postcolonial critic like Ranajit Guha wishes to speak on behalf of a Santal tribal leader who ascribes his acts of resistance to obeying the voice of a god, he cannot really do so on that leader's own terms.¹⁵ Instead, local forms of religious or folk belief and practice tend to be defended by ecocritics in terms that are predominantly those of global environmental science. Thus, a piece of folklore about the forest in one of the nations of Kenya is praised by way of contrast to former European colonial notions of 'the jungle' or the capitalist metrics

of industrial forestry, and so on. What is evident here is that traditional beliefs or practices must undergo metamorphosis in such endorsements: they are certainly affirmed, but in ways that derive their authority from the outside.

Chakrabarty's proposal in response to such issues was simply to let this discrepancy of modes of understanding stay visible, rather than try to cover it up.

In the mode of being attentive to the 'minority' of subaltern pasts, we stay with heterogeneities without seeking to reduce them to any overarching principle that speaks for an already given whole. There is no third voice that can assimilate the different voices of Guha and the Santal leader; we have to stay with both, and with the gap between them that signals an irreducible plurality in our own experience of historicity.¹⁶

Ecocritics now routinely affirm such cultural plurality, seeing it, like Patrick D. Murphy, as akin to biological diversity.¹⁷ This may have seemed the best conclusion to draw in 1997 when Chakrabarty made this argument, but in an Anthropocene context in which keeping an area in its old or 'natural' state may well involve active intervention, or when to do nothing is *already* a fateful decision, then simply to highlight a plurality of understandings will no longer be adequate. Environmental disputes are not academic debates, nor simply matters of cultural recognition.

A WORLD LITERATURE CRITICISM?

The newly fashionable if problematic notion of 'world literature' is now 'taking over, or trying to take over, from the ailing category of postcolonial literature', writes Bruce Robbins.¹⁸ World literature can name 'an ethical project' in that it 'asks us to imagine or act out an ethical relation to the world as a whole' (391).

Heise's essay 'World Literature and the Environment' suggests a growing 'environmental world literature canon' (404), and illustrates

part of it in surveying a Caribbean, a Chinese and two Indian texts, each of which turns around 'a scenario of environmental crisis with sometimes explicit and sometimes implied global implications' (405). She affirms Jiang Rong's *Wolf Totem* (2004)¹⁹ as a narrative of internal colonialism in China, depicting as it does the destruction of the traditional lifestyles of Mongolian nomads, forced to make way for Han Chinese farms. It contrasts the nature of the nomad's traditional hunting of wolves with the creatures' later mass extermination for land clearance. This novel was a bestseller in China and has been popular globally, Heise suggests, because forms of mourning for wild creatures are now widely felt 'by cultures around the world'. In this way Rong's text and others are building 'a new kind of "eco-cosmopolitanism"' (411).

Another world literature approach might be to focus on how a decisive commodity or resource is engaged in texts across the globe. A primary example would be 'petrofiction', already discussed in Chapter 4. Even more provocative is the topic of rivers, or fresh water. Rivers are often decisive for the nature of the human cultures on their banks, as in the ancient civilisations of the Nile, Tigris, Euphrates or Ganges. They determine people's concepts of nature and the divine. As places where the dependency of human settlements on natural resources becomes starkly visible, rivers also lie on what are often simultaneously natural, cultural and political borders, as both sites of reverence and cause of war. What may be a matter of an 'environmental unconscious' for, say, a businessman on a lush golf course in Arizona, or a gardener in Los Angeles, becomes newly visible and contentious at places like the Glen Canyon Dam, or is brought to angry voice in texts like the poem 'A River Dies of Thirst' by the Palestinian poet Mahmoud Darwish, concerning the pollution of the River Jordan and the diversion of its waters by Israel.²⁰

Petrofiction and critical surveys of texts on water can map disparate places and modes of life across the world according to often hidden structures of social, political and environmental violence. Such a map would correspond in part to the specific idea of 'world literature' that has been suggested in the Marxist tradition of criticism, aiming to work out a systemising global overview of



IMAGE 5 *Three Gorges Dam, China.* 'The biggest hydroelectric power station in the world – Three Gorges Dam on Yangtze River in China', Lao Ma/Shutterstock.com.

tensions between the local and the international, and the profound dislocations brought about by international capitalism. The rationale for such a concept is the way in which capitalism, over the past 500 years, has itself come to operate as a loosely coherent 'world-system', linking disparate regions in regimes of uneven development, resource exploitation, deliberately induced 'underdevelopment', forced migrations and the displacement and extinction of non-human animals. Such 'world-system theory' is one fruitful context for an emerging 'Anthropocene criticism', even if it risks giving overly exclusive attention to European capitalism and colonialism, while literatures that predate the sixteenth century clearly still would be challenge for it.

Upamanyu Pablo Mukherjee writes:

Once we have grasped this idea of postcolonial India as a globalized entity within a world system, it is impossible not to see that its condition speaks simultaneously at local and global, specific and

general, levels. What is happening in India is also happening, has happened and will happen in the rest of Asia, Africa and Latin America. Since at the heart of both colonialism and neo-colonialism lies the historical fact of unfolding, expanding capital, India (and all other 'new' postcolonies) can be seen as part of a singular, but radically uneven, world.²¹

Thus, as already sketched at the start of this book, John Clare's engagement with the enclosures in early nineteenth-century England can be seen as both repeating and anticipating forms of land appropriation of the kind associated with postcolonial and neo-colonial contexts, such as the Yirrkala people in northern Australia losing ancestral land in the 1960s to mining companies protected by national government. Handley suggests: 'In comparative and ecological readings, major nature writing from the North becomes less the suspicious enemy and more a valuable point of comparative reflection on similar questions.'²²

How to extend such concerns with environmental topics (fuel, water) into a criticism engaged with questions of form and technique? Michael Niblett takes up the issue of literary form in relation to world-system theory:

If, as Roberto Schwarz argues, literary forms are 'the abstract of specific social relationships' ... then are they not also the abstract of specific ecological relationships? I think this is necessarily the case. Contrary to how they appear under capitalism, nature and society are not separate entities but form a dialectical unity ... 'nature' and 'society' must be grasped as singular abstractions and as the *results* of the dialectic of human and extra-human natures.²³

Niblett deploys this insight in a reading of Janice Shinebourne's *The Last English Plantation* (1988).²⁴ This is a novel set in the Guyana of the 1950s, a time of drastic 'modernisation' of the country's dominant sugar industry. Shinebourne's text deploys the mode of the

Bildungsroman novel of education/personal development in relation to its central character, June Lehall. This is a European narrative form which embodies notions of personal growth, acculturation and self-realisation: such values are also promulgated by the education system in which June is brought up. Yet the vectors of this familiar European narrative trajectory are short-circuited by patterns of repetition in the plot, of expectation and its disappointment, as if things were going around in circles rather than forwards. Close attention to the daily pressures of clock time enacts 'the structure of feeling engendered by the political ecology of the sugar frontier and its patterning of human and extra-human relations', caught in its boom-bust economy (280), in a place where it is '“not possible to be anything but poor”' (279).

Another contemporary South African novel, Zakes Mda's *The Heart of Redness* (2000),²⁵ stands out for the way it directly engages such issues through innovative use of narrative form and conventions of characterisation. Mda addresses conflicts between traditional forms of belief and the vicious international hegemony of neo-liberal capitalism. He does this in part by deploying two narratives in different time frames, although to very different effect from Boyle's use of a similar device in *A Friend of the Earth*. A historical narrative, set in the 1850s, concerns one of the most enigmatic traumas in South African colonial history. In the mid-nineteenth century, an adolescent prophetess named Nongqawuse preached salvation for the Xhosa people if they would slaughter all of their own cattle, many then afflicted with foreign disease, and burn all of their crops. In response, the spirits of their ancestors would rise and drive away the British colonisers. New healthy cattle and crops would appear. This desperate cult led to widespread starvation and disease, and the effective capitulation of the Xhosa nation. It also led to persistent internal recriminations, with Believers in Nongqawuse ascribing the failure of her prophecies to those Unbelievers who had refused to kill their cattle or destroy their crops.

Mda derives his narrative of the cattle-killing from Jeff Peires historical study *The Dead Will Arise* (1989).²⁶ His interest is not in offering a new interpretation of a historical event (as in much

so-called historiographical metafiction) but in how an account of this well-known trauma has reverberations for reading contemporary events in this same area of the East Cape in a post-apartheid South Africa, the focus of the second, larger narrative, set in the present day. The locale of the story, the beautiful East Cape village of Qolorha-by-Sea, is depicted as being at the centre of cultural and political debates about tradition, about 'backwardness' and modernisation. The debate is triggered by conflicting local reactions to proposals for some allegedly beneficial development in the village, a casino to draw in tourists, accompanied by some villas for millionaires.

The title *The Heart of Redness* is not primarily a reference to Joseph Conrad's controversial *Heart of Darkness* (1899), but refers to the way, in Xhosa tradition, the word 'red' is used pejoratively by some would-be progressives to name the supposedly backward, uncivilised or anachronistic. It refers to the traditional ochre red costumes of Xhosa people.

The dispute is mainly embodied in the figures of two older men, Zim, with his 'battle to preserve the rituals of the Believers' (42), and Bhonco, who sees that his 'role in life is to teach people not to believe' (6), and a crucial third figure, Camagu. The latter had returned four years since to a now post-apartheid South Africa, after decades in the United States working as a consultant in the field of 'development communication' for UNESCO and other bodies (29). He is now without occupation in a South Africa whose government is newly corrupt, dominated by favouritism towards the so-called Aristocrats of the revolution. Camagu becomes mixed up in a new, bitter dispute between latter-day so-called Believers like Zim and Unbelievers in the village, concerning the government-approved proposal to build the tourist casino and the millionaires' villas, all presented by dubious rhetoric about modernisation, new jobs and other supposed communal benefits. Bhonco, a supporter of the scheme, is an 'Unbeliever', rejecting manifestations of 'redness' and blaming all problems in his life, such as lack of a pension, on the fact that 'his [Zim's] ancestors forced the amaXhosa people to kill their own cattle' (45), whereas for Zim, opposed to the scheme, life is so difficult because 'Unbelievers' like Bhonco 'refused to slaughter

the cattle even when prophetesses like Nongqawuse, Nonkosi, and Nombanda instructed them to do so' (45–6). Torn briefly between Bhonco's daughter, a successful teacher and fervent moderniser, and Zim's daughter, Qukezwa, Camagu eventually marries the enigmatic Qukezwa, a 'Believer' (like a namesake of hers in the historical narrative). She has a deep and even seemingly magical intimacy with the natural world, but embraces modern life in qualified ways: she sings of the prophetess Nongqawuse, and is seen destroying alien imported inkberry trees that 'kill the plants of [her] forefathers' (90), but she also longs to see the city. The marriage of Camagu and Qukezwa is, rather stereotypically perhaps, a union between an educated cosmopolitan and a local woman with elements of an enchantress.

In Boyle's *A Friend of the Earth* the relation of the future climate change narrative to the earlier eco-activist one seemed to form a critique of traditional environmental activism. In the *Heart of Redness*, however, the relation of the two narratives has the effect of complicating the stability or desirability of overly fixed conceptions of the traditional and the modern, the natural and the built, the indigenous and the foreign. Here, the kind of lack of closure felt in Gordimer's *Get a Life* is dramatised more directly and analytically. Mda's novel exemplifies an Anthropocene sense of complexity, one in which even the most ethically satisfactory solutions to social and environmental dilemmas are known to be fragile and with displaced or latent costs.

The perplexity of the issues is felt most strongly at those points where Mda's text jumps between the historical narrative and the present-day one, sometimes with characters with an identical name. The reader suddenly needs to move from using the term 'Unbeliever' in the sense of those who refused to obey or recognise the cattle-killing ordnance of the supposed prophet – a seemingly rational refusal, at least to a modern mind – and the same term, 'Unbeliever', to name those in the village who seem naively eager to embrace modernisation and reject their supposed backwardness. Bhonco and his daughter welcome the proposed casino, rejecting the traditional beliefs and customs of the Xhosa. Likewise, in the contemporary narrative, 'Believers' now serves to name those who wish

to defend and conserve the Xhosa village, its environment and customs. In sum, Mda uses parallel narratives to highlight moral and environmental dilemmas that resist any simply either/or choice. Caminero-Santangelo writes that Mda 'debunks binaries [i.e. binary oppositions such as 'indigenous' versus 'alien'] and the static categories they entail' (103).

The fact that the same names (Dalton, Twin, Twin Twin, and Qukerzwa, etc.) and the same general terms, Believers and Unbelievers, occur in both narratives leads to some interesting implied analogies, ironies and other forms of suggestion in relation to matters of identity, postcolonial politics and environmental ethics. For instance, in the earlier narrative the character called Dalton is an active coloniser, implicated in war and atrocity. In the modern narrative his descendant, also John Dalton, is a resident who speaks isiXhosa better than many of his fellow villagers, for whom he keeps the store, and he is deeply suspicious of programmes of modernisation such as the casino. He sometimes takes visitors on local cultural tours. A climax of the novel is when this Dalton is pictured halting the surveyors for the casino at the last minute, rather theatrically, having secured official support for making Qolorha-by-Sea into a kind of protected heritage site, preserving the memory and history of Nongqawuse.

Dalton's resulting 'cultural village' is a place of peculiarly ambivalent status. On the one hand, it seems a space for preserving traditional Xhosa initiation ceremonies, costumes, dancing and stick fighting, but this is by displaying them in the one unreal condensed arena, and rendering them a kind of dubious museum exhibit. In this the scheme is reminiscent of earlier scenes in the novel depicting tourism as a kind of commodified voyeurism. Such a 'cultural village' also falsely implies that Xhosa culture is entirely a matter of the past, and that its continuing and modern metamorphoses are not also Xhosa cultural life. On the other hand, Dalton knowingly thinks of the people who engage traditional practices for his cultural tourism as supporting themselves as actors and performers: its openly acknowledged inauthenticity complicates and resists the overly neo-colonial elements of tourism.

Camagu's project for the village is similar, a backpackers' holiday camp where tourists are treated in the mode of guests of the Xhosa amaGcaleka clan. Both Dalton and Camagu's projects are qualified triumphs of the 'Believers', defending Xhosa life and tradition in ways that give people a sense of control that would have been lacking with the casino and millionaires' villas. Nevertheless, as Rita Barnard observes, 'the lines between the roles of host, servant, entertainer, and spectacle are not easy to draw'.²⁷ In sum, Xhosa culture, if not ossified in the past, inevitably becomes a site of contestation, and of unbelief in any supposed absolutes from its own history. Notions of the indigenous cannot be merely reaffirmed, for the changed national and global context would already render them a kind of performance, liable to commodification by tourism on the one hand, or to forms of atavism and intolerance on the other. The overall stance enacted in the novel seems to have no choice but to be a partly undecidable and contradictory one.

This raises some further, general issues about how such a postcolonial novel relates to the question of narrative 'closure', i.e. any sense that all issues in the book have achieved at least intellectual resolution as to their significance or moral status. Postcolonial environmental scenarios across the world are now such that a text offering 'closure' in this familiar sense is also one likely to seem overly simplistic, even evasive. It is as if recognising the so-called Anthropocene now also entails a shift in perceived aesthetic categories of judgement, while endorsing values of complexity and even irresolution. Literary or critical texts that celebrate a stable sense of identity or rootedness are also now likely to be read, on an implicitly global scale, as blocking off issues of the fragility, plurality and contingent nature of specific identity claims or realities in any place or bioregion.

Will Self's 'Scale' dramatises a speaker whose life and self-conceptions become legible as part of the epiphenomenal surface effects of his material context. The traditional realist notions of psychic coherence and personal development seemed undercut by devices, like the generative punning, which dramatise individual personality as the surface construct of a kind of textual/contextual

mechanism. Gordimer, in a comparable way, but by subtle use of a more traditional realism and by means of an unresolved tonality in the narrative voice, makes Bannerman's dramatised personhood legible as a product of specific social and historical factors and evasions. In Mda's *The Heart of Redness*, in which nineteenth- and twentieth-century characters are uncertain or contentious doubles of each other, consideration of environmental questions in a late twentieth- or early twenty-first-century context is inherently deconstructive of any thinking in terms of stable contraries:

The grounds offered for resistance and conservation constantly shift. The novel suggests that the local, the natural, and the indigenous must be seen as emerging and reemerging from specific, messy interrelationships with their supposed opposites (Caminero-Santangelo).²⁸

FUTURES: AN 'ANTHROPOCENE ECOCRITICISM'?

In Handley's words, '[c]riticism should not seek to reduce literature, like a dam in river, to an ideologically fixed point'.²⁹ Might 'post-colonial ecocriticism' soon come to be subsumed into a broader, global category of 'Anthropocene criticism', more open to irresolution, the imponderable and the contingences of scale?

A putative 'Anthropocene criticism' would want to extend its scope beyond explicitly environmentalist texts of the kind Heise discusses in her 'World Literature and the Environment'. As already stated, recognition of the 'Anthropocene', whether as geological or historical category, should now render all criticism variously 'post-colonial' in the broad sense of working in contexts alert to the global impact of past imperialisms and contemporary neo-colonialism. It corresponds to modes of reading not limited to explicit environmental disputes. For instance, a critique of the narrow cultural assumptions resting on private car use in some novel set in Canada might, rightly performed, be effectively as 'postcolonial' as an essay

defending the culture of a Pacific Island people. It is easy to imagine that, in the twenty-second century, any surveys of Western literature in the twentieth century are going to be in terms of the material and cultural effects of an extraordinarily destructive infrastructure, with this framing the currently more familiar issues of cultural and identity politics in ways that would still elude recognition today. For instance, innumerable current would-be progressive critical readings of a twentieth- or twenty-first-century text, arguing for a more equitable inclusion of a particular group in that nation's wealth, will still emerge as blinkered and reactionary on the world scale if that overall national prosperity remains based on unsustainable modes of appropriation from people elsewhere.³⁰

Mariano Suskind concludes that it is best to think of 'world literature, not as a defined corpus, but as a way of reading, of making relations and imagining unexpected and non-national contexts that may illuminate new meanings in certain literary works'.³¹ As it picks up and rereads numerous past and contemporary texts, ecocriticism can be seen as acknowledging and categorising an emerging body of world literature in the sense of work approached on the planetary scale and to be understood, for all its diversity, by a common horizon of related challenges. Thus, a new reading list for a course in ecocriticism may include work on an emerging Chinese ecocriticism of reaffirmed Daoist (Taoist) and Confucian traditions of thought,³² studies of finally unsustainable assumptions about energy use in British Victorian culture,³³ or rereadings of the Mahabharata.³⁴

Ecocriticism overall has the potential – at least – to develop into a fully contemporary 'world-literary criticism', comprehensive in its acknowledging the demands of artistic, social *and* environmental diversity, along with the ethical claims of non-human lives. Thus, as we have seen, Robinson's 'Science and in the Capital' trilogy can read as an example of how a certain conception of the novel is both incongruous as a mode of thought on this scale and culturally reductive and appropriative, with its narrow US-centric focus, and its debt to Western Romantic notions of personhood and individualism. Rigby's reading of Wright's 'Dust' must be seen as offering a rather

crude notion of the Anthropocene in the simple terms of the one destructive Australian example writ large.

More positively, Sharae Deckard takes up China Miéville's distinction between the 'literature of recognition' and the 'literature of estrangement':

While the first produces a feeling of familiar, comfortable recognition in the reader, endorsing the reality of immediate appearances – the hegemonic perspective – , the second produces a sense of shock or the strange in its revelation of a hitherto obscured or unrecognized reality – the peripheral or world-literary perspective (Miéville, 2012).³⁵

Like Niblett's reading of Shinebourne's *The Last English Plantation* (1988), much work in postcolonial criticism often contrasts the supposedly formal placidity or moral complacency of Western novels to kinds of formal awareness or experimentation that correlate with the disjunctive social realities of peripheral parts of the world system. Ghosh makes a similar point in his polemic *The Great Derangement*. This approach, however, is caricaturing of Western literature. It is also increasingly anachronistic, given the way modern Western novels have long taken up formal techniques in plot and characterisation of the kind Niblett associated with postcolonial contexts.

The Anthropocene, as a predicament in which local environmental conditions become unstable and liable even to sudden change or collapse, becomes a kind of migration or displacement *in situ*, even while for many others it entails literal displacement and flight. Consequently, the kinds of disjunction, fragmentation and sense of caprice that Deckard and Niblett stress as especially marking the peripheries of the world-ecology, come increasingly to characterise conditions in any place. As we have seen, Vermeulen speculates that, in this emerging global/material context, the novel may be a form whose conventions of representation are being pushed to breaking point.

Deckard suggests that 'resistance' to global capitalism need not only refer to political activity and the 'environmentalism of

the poor', but also could include the effects of natural phenomena eluding and even confounding human programmes of control, prediction or commodification. She refers to what Jason Moore nicknames the 'superweed effect', 'the spiral of unpredictable responses that we see today from extra-human nature – superweeds, MSA staph infections, manifold cancers and autoimmune disorders, avian and swine influenzas',³⁶ like the fast-growing kudzu vine that features in the storm devastated Florida of Hogan's *Power*.

Deckard's main argument, however, corresponds to ecocriticism's mainstream stance, that environmental degradation is to be directly correlated with political and economic victimage. Environmental disasters, like floods, fire or desertification, are to be traced primarily as the physical manifestation or side effects of social, political and economic injustices between human beings. This is a version of an 'Anthropocene' which maintains a tight connection between the human and non-human forms of violence and disruption, in accordance with the view of the Anthropocene as the dark shadow of modernity (as with the work described in Chapter 1, by Davies, Angus, Bonneuil and Fressoz). However, a question emerges for any intellectual commitment to addressing environmental problems too exclusively in terms of easily read if undeniable, human-to-human wrongs: how far do such arguments still assume as a background norm the continued context of essentially Holocene global conditions?

The clear-cut mainstream view of the Anthropocene as the historical repercussion of modernisation seems likely to be eroded as an increasingly fragile rationalisation of a host of unintended consequences whose complexity seems set to correspond less and less to amenable intellectual maps, such as the neatness of schemas of combined and uneven development, with their critical processing of texts as 'hyper-aestheticized national allegories that express their cultural particularities' (Suskind).³⁷ Its dynamic of 'centre' and 'periphery' may make world-system theory seem overly formulaic.³⁸ The critical readings by Mukherjee, Deckard and Niblett all still relate elements in non-realist texts that may seem irrational, or fantastic – magic plants, unknown spiritual forces – back to fundamentally

social causes, so that the working conception of nature here remains an essentially passive one, as the readily legible expression of human realities. However, superweeds and innumerable other such phenomena possess an element of caprice and incalculability that it is less possible to map directly upon specific instances of human-to-human wrong, changes in patterns of rainfall for instance. The elements of caprice and the unpredictable means that what happens at the 'world scale' becomes rather a destabilisation of the concept of a 'world' itself in the sense of a common, unitary horizon of material and social factors, held in some overview as making sense together. Such destabilisations also underline revisionist and inhumanist challenges to inherited conceptions and idealisations of the 'human'. A disconcerting re-enchantment of the world, more familiar in some forms of genre fiction (gothic, the fantastic) threatens to incline more to forms of intellectual despair and at worst, anti-Enlightenment kinds of superstition, fatalism or extremism.

The future challenge for ecocriticism as a cosmopolitan form of intellectual activism will be to continue the work of social and environmental critique even as a degrading global environment becomes less legible in terms of immediate and readily understood local narratives. It is a future set to make the limited institutions of democracy, such as they are, even more fragile. This will render ecocriticism's advocacy of change of values more difficult of success, in the face of the immediate short-term threats of environmental emergency and possible social collapse.

The strength of ecocriticism has always lain in its stress on how much the environmental crisis is one of culture and imagination. The weakness, or intellectual temptation of ecocriticism, also lies here, in ascribing to debates about cultural representations a wider, more decisive power than they invariably have. All the same, any green stance that stays within the law can have impact only within a social context in which enlightened public debate and representations have some ability to effect change. So basic to ecocriticism, in its activist, or perhaps utopian, self-image, is also a fundamental if assumed commitment to certain democratic modern norms and institutions of politics.

Notes

INTRODUCTION

- 1 Edward Abbey, *The Monkey Wrench Gang* (Philadelphia, PA: Lippincott, 1975).
- 2 Rachel Carson, *Silent Spring* (New York: Houghton Mifflin, 1962).
- 3 See M. Jimmie Killingsworth and Jacqueline S. Palmer, *Ecospeak: Rhetoric and Environmental Politics in America* (Carbondale, IL: Southern Illinois University Press, 1991).
- 4 Edward Abbey, 'Remarks, Glen Canyon Dam, Spring Equinox 1981', <https://theanarchistlibrary.org/library/edward-abbey-remarks-glen-canyon-dam-spring-equinox-1981>.
- 5 J. R. McNeill and Peter Engelke, *The Great Acceleration: An Environmental History of the Anthropocene since 1945* (Cambridge, MA: Belknap Press of Harvard University Press, 2014).
- 6 Greg Garrard, *Ecocriticism*, 2nd ed. (London: Routledge, 2011), 3–4.
- 7 Terry Gifford, 'Gary Snyder and the Post-Pastoral', in *Ecopoetry: A Critical Introduction*, ed. J. Scott Bryson (Salt Lake City, UT: University of Utah Press, 2002), 77–87 (84).
- 8 <https://theanarchistlibrary.org/library/edward-abbey-remarks-glen-canyon-dam-spring-equinox-1981>.
- 9 See Jonathan Watts and John Vidal, 'Environmental Defenders Being Killed in Record Numbers Globally, New Research Reveals', *The Guardian*, 13 July 2017; <http://environmentalhistory.org/people/environmental-murder/>.
- 10 Ulrich Beck, *World at Risk* (Cambridge: Polity Press, 2007), trans. Ciaran Cronin, 98; quoted in Molly Wallace, *Risk Criticism: Precautionary Reading in an Age of Environmental Uncertainty* (Ann Arbor, MI: University of Michigan Press, 2016), 64–92 (69).
- 11 Beck, 98; quoted in Wallace, 86.
- 12 Stacy Alaimo, *Exposed: Environmental Politics & Pleasures in Posthuman Times* (Minneapolis, MN: University of Minnesota Press, 2016), 79–80.
- 13 *Ibid.*, 134–6.
- 14 Beck, 98; quoted in Wallace, 69.
- 15 Indra Sinha, *Animal's People* (2007; London: Pocket Books, 2008).

- 16 Ibid., 361; quoted in Wallace, 86.
- 17 The text of the poem is taken from *John Clare: Selected Poems*, ed. Geoffrey Summerfield (London: Penguin, 1990), 172–8.
- 18 Ogaga Ifowodo, *The Oil Lamp* (Asmara, Eritrea: Africa World Press, 2005); Abd al-Rahman Munif, *Cities of Salt* (1984; London: Jonathan Cape, 1988), trans. Peter Theroux.
- 19 Aldo Leopold, 'Thinking Like a Mountain' is the title of a chapter in his *A Sand County Almanac* (New York: Oxford University Press, 1949).
- 20 Berthold Brecht, *Poems Part Two 1929–1938*, ed. John Willett and Ralph Manheim, with Erich Fried (London: Eyre Methuen, 1976), 252.
- 21 For an ecofeminist reading of this poem, critical of its appropriative individualism, see Scott Hess, 'Three "Natures": Teaching Romantic Ecology in the Poetry of William Wordsworth, Dorothy Wordsworth, and John Clare', in *Romanticism, Ecology and Pedagogy*, www.rc.umd.edu/pedagogies/commons/ecology/hess/hess.html.
- 22 Robert Macfarlane, 'Generation Anthropocene: How Humans Have Altered the Planet for Ever', *The Guardian*, Friday 1 April 2016, www.theguardian.com/books/2016/apr/01/generation-anthropocene-altered-planet-for-ever.
- 23 Ibid.
- 24 Ibid.
- 25 Matthew Calarco, *Thinking through Animals: Identity, Difference, Indistinction* (Stanford, CA: Stanford University Press, 2015), 6.
- 26 Cary Wolfe, *What is Posthumanism?* (Minneapolis, MN: University of Minnesota Press, 2010), xv.
- 27 Ibid., xv.
- 28 *Rethinking the Theatre of the Absurd: Ecology, the Environment and the Greening of the Modern Stage*, ed. Carl Lavery and Clare Finburgh (London: Bloomsbury, 2015).
- 29 Gillian Rudd, *Greenery: Ecocritical Readings of Late Medieval English Literature* (Manchester: Manchester University Press, 2007).
- 30 *J.G. Ballard and the Natural World*, a special issue of *Green Letters*, forthcoming.
- 31 For example, Laurence W. Mazzeno and Ronald D. Morrison, *Victorian Writers and the Environment* (London: Routledge, 2016).
- 32 For a comprehensive overview of ecocritical work in various historical periods and cultural fields, see Derek Gladwin, 'Ecocriticism', in *Oxford Bibliographies*, www.oxfordbibliographies.com/view/document/obo-9780190221911/obo-9780190221911-0014.xml.
- 33 John Bellamy Foster, *Marx's Ecology: Materialism and Nature* (New York: Monthly Review Press, 2000), 10–11.

I THE 'ANTHROPOCENE'? NATURE AND COMPLEXITY

- 1 Damian Carrington, 'The Anthropocene Epoch: Scientists Declare Dawn of Human-Influenced Age', www.theguardian.com/environment/2016/aug/29/declare-anthropocene-epoch-experts-urge-geological-congress-human-impact-earth.
- 2 William F. Ruddiman's, *Plows, Plagues, and Petroleum: How Humans Took Control of Climate* (Princeton, NJ: Princeton University Press, 2005) argues that humans have actually been changing the climate for some 8,000 years.
- 3 See <https://quaternary.stratigraphy.org/workinggroups/anthropocene/>.
- 4 Naomi Oreskes and Erik M. Conway, *The Collapse of Western Civilization: A View From The Future* (New York: Columbia University Press, 2014).
- 5 J. Zalasiewicz, M. Williams, W. Steffen and P. Crutzen, 'The New World of the Anthropocene', *Environmental Science and Technology* 44 (2010), 2228–31 (2231).
- 6 'A Conversation with J. R. McNeill', www.historicalclimatology.com/interviews/a-conversation-with-j-r-mcneill.
- 7 Zalasiewicz, Williams, Steffen and Crutzen, 'The New World of the Anthropocene', 2231.
- 8 Jeremy Davies, *The Birth of the Anthropocene* (Oakland, CA: University of California Press, 2016).
- 9 Whitney J. Autin and John M. Holbrook, 'Is the Anthropocene an Issue of Stratigraphy or Pop Culture?', *GSA Today* 22 (7) (July 2012), www.eas.ualberta.ca/wolfe/eprints/GSA_Today.pdf. For debate on alternative names for an 'Anthropocene', see Phillip John Usher, 'Untranslating the Anthropocene', *Diacritics* 44(3) (2016), 56–77 (68).
- 10 P. De Wever and S. Finney, 'L:'Anthropocène: sujet géologique ou sociétal?', *Géochronique: Magazine des Géosciences* 140 (December 2016), 8–13. My thanks to Professor Thomas Servais for sending me this important objection. At the time he co-wrote this paper, Finney had recently been Chair of the International Commission on Stratigraphy, the body whose remit is to define the divisions of geological time.
- 11 Timothy Clark, *Ecocriticism on the Edge: The Anthropocene as a Threshold Concept* (London: Bloomsbury, 2015).
- 12 Johan Rockström and Mattia Klum, *Big World Small Planet* (Stockholm, Sweden: Max Ström, 2015).
- 13 Will Steffen, Jacques Grinevald, Paul Crutzen and John McNeill, 'The Anthropocene: Conceptual and Historical Perspectives', *Philosophical Transactions of the Royal Society A* 369 (1938) (2011), 860.

- 14 Lawrence E. Cahoon, *From Modernism to Postmodernism: An Anthology* (Oxford: Blackwell, 1996).
- 15 See Matthew Watson, 'Time to Stage Trials of Engineering the Atmosphere to Cool Earth', *New Scientist*, 23 November 2016, www.newscientist.com/article/2113880-time-to-stage-trials-of-engineering-the-atmosphere-to-cool-earth/
- 16 Clive Hamilton, 'Utopias in the Anthropocene', <http://mahb.stanford.edu/wp-content/uploads/2012/08/2012-Clive-Hamilton-Denver-ASA-Talk.pdf>.
- 17 Ian Angus, *Facing the Anthropocene: Fossil Capitalism and the Crisis of the Earth System* (New York: Monthly Review Press, 2016). For the debate that the Anthropocene should be called the 'Capitalocene', see Jason W. Moore, *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism* (Oakland, CA: PM Press, 2016).
- 18 John Bellamy Foster, Brett Clark and Richard York, *The Ecological Rift: Capitalism's War on the Earth* (New York: Monthly Review Press, 2010), 441.
- 19 Christophe Bonneuil and Jean-Baptiste Fressoz, *The Shock of the Anthropocene* (London: Verso: 2016).
- 20 Clive Hamilton, *Defiant Earth: The Fate of Humans in the Anthropocene* (Cambridge: Polity, 2017), 80.
- 21 Dipesh Chakrabarty, 'The Anthropocene and the Convergence of Histories', in *The Anthropocene and the Global Environmental Crisis: Rethinking Modernity in a New Epoch*, ed. Clive Hamilton, Christophe Bonneuil and François Gemenne (London: Routledge, 2015), 44–56.
- 22 Dipesh Chakrabarty, 'The Climate of History: Four Theses', *Critical Inquiry* 35 (2009), 197–222 (2008).
- 23 See Michael Le Page, 'Latest Numbers Show at Least 5 Meters Sea-Level Rise Locked In', *New Scientist*, 10 June 2015, www.newscientist.com/article/mg22630253-300-latest-numbers-show-at-least-5-metres-sea-level-rise-locked-in/.
- 24 Chakrabarty, 'The Anthropocene and the Convergence of Histories', 50. For an overview, see my "'But the Real Problem Is ...": The Chameleonic Insidiousness of "Overpopulation" in the Environmental Humanities', *Oxford Literary Review* 38 (2016), 7–26.
- 25 'Despite its importance, ecocritics have had nothing to say about the population problem beyond dark allusions to the perils of Malthusianism', Greg Garrard, 'Worlds Without Us: Some Types of Disanthropy', *Substance* 41 (2012), 40–58 (54); 'Make Kin, Not

- Babies!’, Donna Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Minneapolis, MN: University of Minnesota Press, 2016), 102; Lawrence Buell, ‘Anthropocene Panic: Contemporary Ecocriticism and the Issue of Human Numbers’, *Frame: Journal of Literary Studies* 29(2) (November 2016).
- 26 See Krishna Ramanujan, ‘Cornell Conservationists Propose Allowing Wild Animals to Roam Parts of North America’, *Cornell Chronicle*, 17 August 2005, news.cornell.edu/stories/2005/08/should-wild-animals-roam-parts-north-america.
 - 27 See Eben Kirksey, *Emergent Ecologies* (Durham, NC: Duke University Press, 2015), 68.
 - 28 Ibid., 57–71.
 - 29 Carl Jones, ‘Kestrel Manoeuvres in the Dark’, *New Scientist*, 3 September 2016, 40–41 (41).
 - 30 Jamie Lorimer, *Wildlife in the Anthropocene: Conservation after Nature* (Minneapolis, MN: University of Minnesota Press, 2015).
 - 31 Martin Drenthen, ‘Understanding the Meaning of Wolf Resurgence, Ecossemiotics, and Landscape Hermeneutics’, in *Thinking about Animals in the Age of the Anthropocene*, ed. Morten Tønnessen, Kristin Armstrong Oma and Silver Rattasepp (Lanham, MD: Lexington, 2016), 109–26 (112).
 - 32 See Erle C. Ellis, Jed O. Kaplan, Dorian Q. Fuller, Steve Vavrus, Kees Klein Goldewijk and Peter H. Verburg, ‘Used Planet: A Global History’, *Proceedings of the National Academy of Sciences* 110(20) (2013), 7978–85.
 - 33 For a survey of the issue, see my ‘Nature, Post Nature’, in *The Cambridge Companion to Literature and the Environment*, ed. Louise Westling (Cambridge: Cambridge University Press, 2014), 75–89.
 - 34 Donna Haraway, *Primate Visions: Gender, Race, and Nature in the World of Modern Science* (London: Routledge, 1990).
 - 35 Kathrine Dow, ‘Seeing with Dolphins: Reflections on the Salience of Cetaceans’, in *Thinking about Animals in the Age of the Anthropocene*, 145–59 (151).
 - 36 R. M. Lockley, *The Private Life of the Rabbit* (1954; London: Corgi, 1976).
 - 37 Richard Adams, *Watership Down* (London: Rex Collins, 1972).
 - 38 See Kate Douglas, ‘Homosexual Selection’, *New Scientist*, 5 (December 2009), 49–51.
 - 39 *Queer Ecologies: Sex, Nature, Politics, Desire*, ed. Catriona Mortimer-Sandilands and Bruce Erickson (Bloomington, IN: Indiana University Press, 2010), 5.

- 40 See Nicole Seymour's readings of 'queer' films or fictions as expressing an empathetic, ethical link to the non-human world, *Strange Natures: Futurity, Empathy, and the Queer Ecological Imagination* (Urbana, IL: University of Illinois Press, 2013).
- 41 In A. E. Housman, *Collected Poems and Selected Prose*, ed. Christopher Ricks (London: Penguin, 1988), 24.
- 42 In *Leaves of Grass and Selected Prose*, ed. Lawrence Buell (New York: The Modern Library, 1981), 259–66.
- 43 In *The Thunder Mutters: 101 Poems for the Planet*, ed. Alice Oswald (London: Faber & Faber, 2005), 74.
- 44 In *The Complete Poems*, ed. Thomas H. Johnson (London: Faber & Faber, 1975), 395.
- 45 Timothy Morton, *Dark Ecology: For a Logic of Coexistence* (New York: Columbia University Press, 2016), 58.
- 46 Bruce Carroll, 'A Role for Art in Ecological Thought', in *Concentric: Literary and Cultural Studies* 43(1) (2017), 145–64.
- 47 An image used on the cover of *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments and Epistemologies*, ed. Heather Davis and Etienne Turpin (London: Open Humanities Press, 2015).
- 48 For Qinang and Lin, see Ursula K. Heise, *Imagining Extinction: The Cultural Meanings of Endangered Species* (Chicago, IL: University of Chicago Press, 2016), 61.
- 49 Morton, quoted by Carroll, 150.
- 50 Carroll, 'A Role for Art in Ecological Thought', 150.
- 51 Ibid., 11.
- 52 Heise, *Imagining Extinction*, 133; see also 160–1.

2 SCALAR LITERACY

- 1 Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis, MN: University of Minnesota Press, 2013).
- 2 See *Scale in Literature and Culture*, ed. Michael Tavel Clarke and David Wittenberg (Cham, Switzerland: Palgrave Macmillan, 2017). This study appeared only while this book was in pre-production.
- 3 Uwe K  chler, 'Climate Change Across Languages and Cultures', in *Teaching Climate Change in the Humanities*, 153–60 (156).
- 4 For such Romantic localism, see my *The Cambridge Introduction to Literature and the Environment* (Cambridge: Cambridge University Press, 2011), 15–34, 130–6.

- 5 George Handley, 'Down Under: New World Literatures and Ecocriticism', in *Ecoambiguity: Community, and Development: Towards a Politicized Ecocriticism*, ed. Scott Slovic, Swarnalatha Rangarajan and Vidya Sarveswaran (Plymouth: Lexington Books, 2014), 179–89 (180).
- 6 Derek Woods, 'Scale Critique for the Anthropocene', *The Minnesota Review* 83 (2014), 133–42.
- 7 Jim Dator, 'Assuming "Responsibility for Our Rose"', in *Environmental Values in a Globalizing World: Nature, Justice and Governance*, ed. Jouni Paavola and Ian Lowe (London: Routledge, 2005), 215–35 (215–16).
- 8 The article was Ken Hiltner's 'Renaissance Literature and Our Contemporary Attitude to Global Warming', *ISLE* 13(3) (Summer 2009), 429–42.
- 9 Ursula Heise, *Sense of Place and Sense of Planet* (Oxford: Oxford University Press, 2008).
- 10 See *Ecocriticism in Taiwan: Identity, Environment, and the Arts*, ed. Chia-ju Chang and Scott Slovic (Lanham, MD: Lexington Books, 2016), xii.
- 11 Mitchell Thomashow, *Bringing the Biosphere Home: Learning to Perceive Global Environmental Change* (Cambridge, MA: MIT Press, 2002).
- 12 Eric Gidal, *Ossianic Unconformities: Bardic Poetry in the Industrial Age* (Charlottesville, VA: University of Virginia Press, 2015).
- 13 This is demonstrated not only in Gidal's own metaphorical use of geology, but also in the fascinating chapter on an eccentric Victorian antiquarian project to trace geological features in the landscape descriptions of the Ossian poems in order to highlight recent environmental damage to the River Clyde region.
- 14 See *The Dialogic Imagination: Four Essays by M.M. Bakhtin*, ed. Michael Holquist, trans. Caryl Emerson and Michael Holquist (Austin, TX: University of Texas Press, 1981).
- 15 *Anthropocene Reading: Literary History in Geologic Time*, ed. Tobias Menely and Jessie Oak Taylor (University Park, PA: Pennsylvania State University Press, 2017), 18, 17.
- 16 Benjamin Morgan, 'Scale as Form', in *Anthropocene Readings*, 132–49 (145).
- 17 *Anthropocene Feminisms*, ed. Richard Grusin (Minneapolis, MN: University of Minnesota Press, 2017).
- 18 Kate Rigby, 'Writing in the Anthropocene: Idle Chatter or Ecoprophetic Witness', in *Australian Humanities Review* 47

- (November 2009), www.australianhumanitiesreview.org/archive/Issue-November-2009/rigby.html
- 19 Judith Wright, *Collected Poems* (Sydney: HarperCollins, 1994), 23–4. Tanya Schwalm reads more recent Australian literature to criticise how, with the national idealisation of the farming of sheep and cattle for slaughter, ‘Australian settler society constructs much of its national identity from the use and consumption of animals’ (‘Animal Writing: Magical Realism and the Posthuman Other’, PhD thesis, University of Canterbury, New Zealand, 2009, 128), <https://ir.canterbury.ac.nz/handle/10092/4470>.
 - 20 Graham Huggan and Helen Tiffin find little evidence in Wright of a genuine attempt to enter in an aboriginal consciousness. See their *Postcolonial Ecocriticism: Literature, Animals, Environment* (New York: Routledge, 2010), 87–94, especially 92.
 - 21 Kate Rigby, ‘Confronting Catastrophe: Ecocriticism in a Warming World’, in *The Cambridge Companion to Literature and the Environment*, 212–25 (222).
 - 22 Bryan G. Norton, ‘Population and Consumption: Environmental Problems as Problems of Scale’, *Ethics and the Environment* 5(1) (2000), 23–45 (34).
 - 23 Johan Rockström and Matthias Klum, *Big World Small Planet: Abundance Within Planetary Boundaries* (Stockholm: Max Ström Publishing, 2015), 95.
 - 24 Editorial introduction, ‘Telling Extinction Stories’, in *Extinction Studies: Stories of Time, Death, and Generations*, ed. Deborah Bird Rose, Thom van Dooren and Matthew Churlew (New York: Columbia University Press, 2017), 9–10.
 - 25 Kim Stanley Robinson, *Forty Signs of Rain* (New York: HarperCollins, 2004); *Fifty Degrees Below* (New York: HarperCollins, 2005); *Sixty Days and Counting* (New York: HarperCollins, 2005).
 - 26 Cited in Adeline Johns-Putra, ‘Ecocriticism, Genre, and Climate Change: Reading the Utopian Vision of Kim Stanley Robinson’s Science in the Capital Trilogy’, *English Studies* 91 (2010), 744–60 (753).
 - 27 *Ibid.*, 754.
 - 28 See Robert Markley, ‘“How to Go Forward”: Catastrophe and Comedy in Kim Stanley Robinson’s Science in the Capital Trilogy’, *Configurations* 20(1–2) (winter–spring 2012), 7–27.
 - 29 See Gabrielle Dürbeck, ‘Das Anthropozän in geistes- und kulturwissenschaftlicher Perspektive’, in *Ecocriticism: Eine Einführung*, ed. Gabrielle Dürbeck and Urte Stobbe (Cologne: Böhlau, 2015), 107–19.

- 30 *Fifty Degrees Below* ends with a Buddhist giving the trite conventional moral, ‘it is easy to live multiple lives! What is hard is to be a whole person’ (520).

3 ECOPOETRY

- 1 See Matthew Griffiths, *The New Poetics of Climate Change: Modernist Aesthetics for a Warming World* (London: Bloomsbury, 2017), 158.
- 2 For instance, *The Thunder Mutters: 101 Poems for the Planet*, ed. Alice Oswald (London: Faber & Faber, 2005); *Earth Songs: A Resurgence Anthology of Contemporary Eco-poetry*, ed. Peter Abbs (Totnes: Green Books, 2002).
- 3 For these coinages, see Helen I. Sullivan, ‘The Dark Pastoral: Goethe and Atwood’, *Green Studies* 20 (2016), 47–59.
- 4 Evelyn Reilly, ‘Environmental Dreamscapes and Eco poetic Grief’, in *Omniverse*, <http://omniverse.us/evelyn-reilly-environmental-dreamscapes-and-ecopoetic-grief/>.
- 5 Wendell Berry, *Collected Poems 1957–1982* (San Francisco, CA: North Point Press, 1985), 69.
- 6 Angus Fletcher defends the view of poetry as a quasi-natural redemptive space in his *A New Theory for American Poetry: Democracy, the Environment, and the Future of Imagination* (Cambridge, MA: Harvard University Press, 2004).
- 7 Jonathan Bate, *The Song of the Earth* (London: Picador, 2000), 64.
- 8 Dana Phillips, *The Truth of Ecology: Nature, Culture, and Literature in America* (New York: Oxford University Press, 2003), 181.
- 9 Griffiths, *The New Poetics of Climate Change*, 160.
- 10 Susanna Lidström and Greg Garrard, ‘“Images Adequate to Our Predicament”: Ecology, Environment and Eco poetics’, *Environmental Humanities* 5 (2014), 35–53 (37).
- 11 Scott Knickerbocker, *Eco poetics: The Language of Nature, Nature of Language* (Amherst, MA: University of Massachusetts Press, 2012).
- 12 Ted Hughes, in *Lupercal* (1960; London: Faber & Faber, 1970), 26.
- 13 See, for example, Janne Stigen-Drangsholt, ‘Ted Hughes and Romanticism: A Poetry of Desolation and Difference’, *Cercles* 12 (2005), 108–20.
- 14 Seamus Heaney, in *Wintering Out* (London: Faber & Faber, 1972), 19.
- 15 See Anthony Carrigan, *Postcolonial Tourism: Literature, Culture, and Environment* (London: Routledge, 2011), 76–101.

- 16 Joyelle McSweeney, 'Poetics, Revelations, and Catastrophes: An Interview with Kamau Brathwaite', www.raintaxi.com/poetics-revelations-and-catastrophes-an-interview-with-kamau-brathwaite/.
- 17 See Rustom Seegopaul, 'A Study into Jumbies', *Kaieteur News*, June 2008, www.kaieteurnews.com/2008/06/08/a-study-into-jumbies/.
- 18 Ibid.
- 19 Tom Bristow, *The Anthropocene Lyric: An Affective Geography of Poetry, Person, Place* (New York: Palgrave Macmillan, 2015); Sam Solnick, *Poetry and the Anthropocene: Ecology, Biology and Technology in Contemporary British and Irish Poetry* (London: Routledge, 2016); Ben Smith, 'Beating the Bounds: Exploring Borders and Scale in Contemporary British Environmental Poetry', PhD thesis, Exeter University, 2012.
- 20 Alice Oswald, *Dart* (London: Faber & Faber, 2002).
- 21 Jonathan Skinner, 'Thoughts on Things: Poetics of the Third Landscape', in *The Eco Language Reader*, ed. Brenda Iijima (Callicoon, NY: Nightboat Books, 2010), 9–48 (17).
- 22 Timothy Morton, *Ecology without Nature: Rethinking Environmental Aesthetics* (Cambridge, MA: Harvard University Press, 2007). John Elder indulges the same fallacy in his foreword to a critical anthology of 2002 affirming that 'poetry itself can manifest the intricate, adaptive, and evolving balance of an ecosystem' (*Ecopoetry*, ed. Bryson, x). If one defence of poetry is that its complexity can help teach the complexity of natural forms and place, nevertheless ecological literacy is still more likely to be improved by actual study outside, rather than dated and aestheticising images of nature in terms of 'evolving balance', etc.
- 23 Skinner, 'Thoughts on Things', quoting Charles Bernstein, 42–3.
- 24 Skinner's case is not helped by a surprising ignorance of natural history: he claims bizarrely that 'weeds such as grass produce rhizomatically, through leaves and stems (and tubers) not seeds' (30), that the supercontinent Pangaea existed 65 million years ago (rather than 250 million years ago) (18), and implies that the nineteenth-century naturalist Alfred Russel Wallace would have been aware of the mid-twentieth-century theory of continental drift (18).
- 25 Evelyn Reilly, *Styrofoam* (New York: Roof Books, 2009).
- 26 Laurel Peacock, 'SAD in the Anthropocene: Brenda Hillman's Ecopoetics of Affect', *Environmental Humanities* 1 (2012), 85–102 (86).
- 27 See, for example, Rich's sequence 'Contradictions: Tracking Poems', in *Your Native Land. Your Life* (New York: Norton, 1986).

- 28 Brenda Hillman, in *Cascadia* (Middletown, CT: Wesleyan University Press, 2011), 4.
- 29 Gaston Bachelard, *The Poetics of Space* (1958; Boston, MA: Beacon Press, 1992).
- 30 Gernot Böhme, *Für eine ökologische Naturästhetik* (Frankfurt am Main: Suhrkamp, 1989); *Atmosphäre* (Frankfurt am Main: Suhrkamp, 1995); *Die Natur vor uns: Naturphilosophie in pragmatischer Hinsicht* (Kusterdingen: Die Graue Edition, 2002). Surprisingly little of Böhme's work is available in English, but see 'An Aesthetic Theory of Nature: An Interim Report', *Thesis Eleven* 32 (1992), 90–102; and 'Aesthetic Knowledge of Nature', *Issues in Contemporary Culture and Aesthetics* 5 (1997), 27–37.
- 31 Böhme, *Atmosphäre*, 142–52.
- 32 Hillman, *Cascadia*, 24.
- 33 Margaret Ronda, 'Anthropogenic Poetics', *Minnesota Review* 83 (2014), 102–11 (109).
- 34 Sam Solnick, 'The Disease of the Interregnum: Irony and Climate Change', *Green Letters* 18(2) (2014), 143–53.
- 35 Juliana Spahr, in *Well Then There Now* (Jaffrey, NH: Black Sparrow Press, 2011), 72–93.
- 36 Dianne Chisholm, 'On the House that Ecopoetics Builds: Juliana Spahr's "Eco" Frame', *Textual Practice* 28 (2014), 631–53 (637).
- 37 From 'The Ecology of Poetry', *ecopoetics* 2 (fall 2002), <https://ecopoetics.files.wordpress.com/2008/06/ec02.pdf>.
- 38 Tony Hoagland, 'Dear Metaphysical: The Poetry of Brenda Hillman', *American Poetry Review* 41(5) (September/October 2012), 11–14 (12).
- 39 Benjamin Zephaniah, *The Little Book of Vegan Poems* (Edinburgh: AK Press, 2000).
- 40 'Editor's Statement', *ecopoetics* 1 (2001), 5–8 (6).
- 41 Sam Solnick, *Poetry and the Anthropocene: Ecology, Biology and Technology in Contemporary British and Irish Poetry* (London: Routledge, 2016), 202.

4 THE CHALLENGE FOR PROSE NARRATIVE

- 1 Barbara Kingsolver, *Flight Behaviour* (London: Faber & Faber, 2012).
- 2 Timothy Clark, *Ecocriticism on the Edge: The Anthropocene as a Threshold Concept* (London: Bloomsbury, 2015), 176–8.

- 3 Erin James, *The Storyworld Accord: Econarratology and Postcolonial Narratives* (Lincoln, NE: University of Nebraska Press, 2015).
- 4 Linda Hogan, *Power* (New York: W. W. Norton, 1998).
- 5 Laurence Buell, *Writing for an Endangered World: Literature, Culture and Environment in the U.S. and Beyond* (Cambridge, MA: Harvard University Press, 2001), 239.
- 6 Virginia Woolf, *Flush: A Biography* (London: Hogarth Press, 1933).
- 7 Barbara Gowdy, *The White Bone* (London: Flamingo, 2000).
- 8 See David Herman's overview, 'Animal Worlds in Modern Fiction: An Introduction', *MFS* 60 (2014), 421–43.
- 9 Thomas Van Dooren, *Flight Ways: Life and Loss at the Edge of Extinction* (New York: Columbia University Press, 2014).
- 10 H. Porter Abbot, 'Narrative and Emergent Behavior', *Poetics Today* 29 (2008), 227–44 (230).
- 11 Lynn Margulis, quoted in Thomashow, *Bringing the Biosphere Home*, 115.
- 12 Abbot, 'Narrative and Emergent Behavior', 237.
- 13 See *ibid.*, 228.
- 14 Roman Bartosch, 'Literary Quality and the Ethics of Reading: Some Thoughts on Literary Evolution and the Fiction of Margaret Atwood, Ilija Trojanow, and Ian McEwan', in *Literature, Ecology, Ethics: Recent Trends in Ecocriticism*, ed. Timo Müller and Michael Sauter (Heidelberg: Winter, 2012), 113–28 (117).
- 15 T. C. Boyle, *A Friend of the Earth* (London: Bloomsbury, 2000).
- 16 Adam Trexler, *Anthropocene Fictions: The Novel in a Time of Climate Change* (Charlottesville, VA: University of Virginia Press, 2015), 144.
- 17 Bill McKibben, *The End of Nature* (New York: Random House, 1989).
- 18 'When I go birding in my Ford, I am devastating an oil field, and re-electing an imperialist to get me rubber', Aldo Leopold, 'Game and Wildlife Conservation', in his *Game Management* (1933; Madison, WI: University of Wisconsin Press, 1986), 23.
- 19 Will Self, *The Book of Dave: A Revelation of the Recent Past and the Distant Future* (London: Bloomsbury, 2006).
- 20 For a critical survey of ecofiction prior to the critical dominance of notions of an Anthropocene, see Jim Dwyer, *Where the Wild Books Are: A Field Guide to Ecofiction* (Reno, NV: University of Nevada Press, 2010).
- 21 Daniel King, in 'Contemporary Studies Network Roundtable: Responding to Robert Macfarlane's "Generation Anthropocene"', <https://olh.openlibhums.org/articles/10.16995/olh.153/>.

- 22 Amitav Ghosh, 'Petrofiction: The Oil Encounter and the Novel', <http://amitavghosh.com/blog/?p=6441>. This also reproduces a very useful bibliography.
- 23 Frederick Buell, 'A Short History of Oil Cultures: Or, the Marriage of Catastrophe and Exuberance', *Journal of American Studies* 46 (2012), 273–93 (290).
- 24 Upton Sinclair, *Oil* (New York: Albert & Charles Boni, 1927).
- 25 Peter Hitchcock, 'Oil in an American Imaginary', *New Formations: A Journal of Culture/Theory/Politics* 69 (2010), 81–97 (89).
- 26 Daniel Worden, 'Fossil-Fuel Futurity: Oil in *Giant*', *Journal of American Studies* 46 (2012), 441–60 (441–2). For 'environmental unconscious', see Buell's *Writing for an Endangered World*, 22–7.
- 27 Edna Ferber, *Giant* (New York: Doubleday, 1952).
- 28 Worden, 'Fossil-Fuel Futurity', 452.
- 29 Alan Stoekl, *Bataille's Peak: Energy, Religion, and Postsustainability* (Minneapolis, MN: University of Minnesota Press, 2007), 132.
- 30 Jennifer Wenzel, 'Petro-Magic-Realism: Toward a Political Ecology of Nigerian Literature', *Postcolonial Studies* 9 (2006), 449–64.
- 31 See *Before I Am Hanged: Ken Saro-Wiwa – Literature, Politics, and Dissent*, ed. Onookome Okome (1999; Trenton, NJ: Africa World Press, 2000).
- 32 Ghassan Kanafani, *Men in the Sun* (1963; London: Heinemann, 1978), trans. Hilary Kilpatrick.
- 33 Abd al-Rahman Munif, *Cities of Salt* (1984; London: Jonathan Cape, 1988), trans. Peter Theroux.
- 34 See Ellen McLarney, 'Empire of the Machine': Oil in the Arabic Novel', *Boundary 2* 36(2) (2009), 177–98.
- 35 Helon Habila, *Oil on Water* (London: Penguin, 2011).
- 36 Byron Caminero-Santangelo, 'Witnessing the Nature of Violence: Resource Extraction and Political Ecologies in the Contemporary African Novel', in *Global Ecologies*, ed. Elizabeth DeLoughrey, Jill Didur and Anthony Carrigan (New York: Routledge, 2015), 226–41 (234).
- 37 Heise, *Imagining Extinction*, 18.
- 38 Paolo Bacigalupi, *The Water Knife* (London: Orbit, 2015).
- 39 Richard Crownshare, 'Speculative Memory, the Planetary and Genre Fiction', *Textual Practice* 31 (2017), 887–910 (889).
- 40 Fredric Jameson, *Archaeologies of the Future: The Desire Called Utopia and Other Science Fictions* (London: Verso, 2007), 203.
- 41 Mark McGurl, 'The Posthuman Comedy', *Critical Inquiry* 38 (2012), 533–53.
- 42 McGurl, '"Neither Indeed Could I Forebear Smiling at My Self": A Reply to Wai Chee Dimock', *Critical Inquiry* 39 (2013), 632–8 (632).

- 43 Jameson, 'Phillip K. Dick, In Memoriam', in *Archaeologies*, 345–8 (348).
- 44 Gry Ulstein, 'Brave New Weird: Anthropocene Monsters in Jeff VanderMeer's *The Southern Reach*', *Concentric: Literary and Cultural Studies* 43 (March 2017), 71–96 (80).
- 45 Amitav Ghosh, *The Great Derangement: Climate Change and the Unthinkable* (Chicago, IL: University of Chicago Press, 2016).
- 46 Robinson attacks such future sci-dystopias for their defeatism in seeming to assume the inevitable triumph of capitalism (Imre Szeman and Maria Whiteman, 'Future Politics: An Interview with Kim Stanley Robinson', *Science Fiction Studies* 31 (2004), 177–88 (187)).
- 47 Guy Debord, *The Society of the Spectacle* (1967; Detroit, MI: Red & Black, 1970), trans. Donald Nicholson-Smith.
- 48 On the environmental disaster of Trump's becoming president of the US as an effect of images of the White House in the entertainment industry, see Bruce Wolpe, 'Trump the Presidency: Did it All Start with The West Wing?', www.abc.net.au/news/2016-12-06/bruce-wolpe-trump-the-presidency-west-wing.
- 49 Elizabeth DeLoughrey, 'Ordinary Futures: Interspecies Worldlings in the Anthropocene', in *Global Ecologies*, 352–72 (352). For a contrary defence of modes of realism in this context, see Ben de Bruyn, 'Realism 4°: Objects, weather and infrastructure in Ben Lerner's 10:04', *Textual Practice* 31 (2017), 951–71.
- 50 Michael Niblett, 'World-Economy, World-Ecology, World Literature', *Green Letters: Studies in Ecocriticism* 16 (2012), 15–30 (22).
- 51 Karen Tei Yamashita, *Tropic of Orange* (Minneapolis, MN: Coffee House Press, 1997).
- 52 Melissa Sexton, 'Tropic of Orange, Los Angeles, and the Anthropocentric Imagination', *Concentric: Literary and Cultural Studies* 43 (2017), 13–32 (27).
- 53 For an excellent overview, see Tonya Schwalm's 'Animal Writing: Magical Realism and the Posthuman Other', Phd thesis, University of Canterbury, 2009.
- 54 Szeman and Whiteman, 'Future Politics: An Interview with Kim Stanley Robinson', 181.
- 55 Ibid., 187.
- 56 Pieter Vermeulen, 'The Critique of Trauma and the Afterlife of the Novel in Tom McCarthy's *Remainder*', *Modern Fiction Studies* 58 (2012), 549–68 (554–5).
- 57 Don DeLillo, *Point Omega* (New York: Scribner, 2010).
- 58 'Don DeLillo's *Point Omega*, the Anthropocene, and the Scales of Literature', *Studia Neophilologica* 87 (2015), 68–81 (72).
- 59 Ibid., 77.

- 60 Ibid., 69.
- 61 Pieter Vermeulen, *Twenty-First Century Fiction: A Critical Introduction* (Cambridge: Cambridge University Press, 2013), 217.
- 62 Vermeulen, 'Trauma and the Afterlife of the Novel', 555.
- 63 DeLillo's title, *Point Omega*, is a reference, perhaps ironic, to Teilhard de Chardin's idea of a state of maximum consciousness and complexity towards which the universe is supposedly evolving.
- 64 Vermeulen, 'Don DeLillo's *Point Omega*', 80.
- 65 In Will Self, *Grey Area* (1994; London: Penguin, 1996), 91–123.
- 66 Richard Walsh, 'Complexity, Scale, Story: Narrative Models in Will Self and Enid Blyton', *Insights* (Institute of Advanced Study, University of Durham) 10 (2017), 2–10 (8–9).
- 67 Richard Walsh, 'The Call of the Phoneme: Introduction', in *On Puns: The Foundation of Letters*, ed. Jonathan Culler (Oxford: Blackwell, 1988), 1–16 (16).
- 68 Ian McEwan, *Solar* (London: Random House, 2010).
- 69 Helen Simpson, *In-Flight Entertainment* (London: Vintage, 2011).
- 70 Simon Critchley, *On Humour* (London: Routledge, 2002), 1.
- 71 *Theory of Fiction*, ed. James Edwin Miller (Lincoln, NE: University of Nebraska Press, 1972), 37.
- 72 McKibben, *The End of Nature*, 41.
- 73 Clark, *Ecocriticism on the Edge*, 176–8.

5 MATERIAL ECOCRITICISM

- 1 Serenella Iovino and Serpil Oppermann, 'Introduction: *Stories Come to Matter*', in *Material Ecocriticism*, ed. Serenella Iovino and Serpil Oppermann (Bloomington, IN: Indiana University Press, 2014), 1–17 (7). The unusual word 'intra-act' is taken from Karen Barad's argument in revisionist physics that the relations precede/constitute the things that might, at first, seem to be prior (*Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter* (Durham, NC: Duke University Press, 2007), 139).
- 2 From 'Brown', in *Prismatic Ecology: Ecotheory beyond Green*, ed. Jeffrey Jerome Cohen (Minneapolis, MN and London: University of Minnesota Press, 2013), 193–212 (209).
- 3 'The Inertia of Matter and the Generativity of Flesh', in *New Materialism: Ontology, Agency, and Politics*, ed. Diana Coole and Samantha Frost (Durham, NC: Duke University Press, 2010), 92–115 (92).
- 4 Coole and Frost, 'Introduction', in *New Materialism*, 10.

- 5 International Society for Biosemiotic Studies, www.biosemiotics.org/.
- 6 Jesper Hoffmeyer, 'Semiotic Scaffolding: A Unitary Principle Gluing Life and Culture Together', *Green Letters* 19 (2015), 243–54 (249).
- 7 Serenella Iovino, 'Steps to a Material Ecocriticism: The Recent Literature about the "New Materialisms" and Its Implications for Ecocritical Theory', *Ecozon* 3(1) (2012), 134–45 (143).
- 8 Alf Hornborg, 'Artifacts Have Consequences, Not Agency: Toward a Critical Theory of Global Environmental History', *European Journal of Social Theory* 20 (2017), 95–110 (96).
- 9 'Source of Life: *Avatar*, *Amazonia*, and an Ecology of Selves', in *Material Ecocriticism*, 253–68.
- 10 Iovino, 'Theorizing Material Ecocriticism: A Diptych', *ISLE* 19 (2012), 448–75 (451).
- 11 Ulrich Beck, *World Risk Society* (London: Polity, 1999), 119.
- 12 Coole and Frost, in *Prismatic Ecology*, xxiv.
- 13 Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham, NC: Duke University Press, 2010), 21.
- 14 Bonneuil and Fressoz, *The Shock of the Anthropocene*, 35.
- 15 Alaimo, 'Oceanic Origins', in *Material Ecocriticism*, 186–203.
- 16 Steve Mentz, *Shipwreck Modernity: Ecologies of Globalization, 1550–1719* (Minneapolis, MN: University of Minnesota Press, 2015).
- 17 Stacy Alaimo, *Bodily Natures: Science, Environment, and the Material Self* (Bloomington, IN: University of Indiana Press, 2010).
- 18 Neill Shubin, *Your Inner Fish* (London: Penguin, 2009).
- 19 Alaimo, *Exposed*, 113; see also 120.
- 20 Carlaco, *Thinking through Animals*, 54.
- 21 Thomas Pynchon, *Gravity's Rainbow* (New York: Viking, 1973).
- 22 See *Rethinking the Theatre of the Absurd*, and Carl Lavery's special edition of *Green Letters* 20(3) (November 2016), 'Performance and Ecology: What Can Theatre Do?'.- 23 David Higgins, *British Romanticism, Climate Change, and the Anthropocene: Writing Tambora* (Basingstoke: Palgrave Macmillan, 2017).
- 24 Although Morton identifies himself with so-called object-oriented ontology, this essay acknowledges its alignment with the thinking of Martin Heidegger and Jacques Derrida against so-called ontotheology, and the metaphysics of presence. In fact, his view of *Twilight Epiphany* becomes very similar to Heidegger's account in 'The Origin of the Work of Art', a 1936 lecture, of an ancient Greek temple. See Heidegger's *Off the Beaten Track* (Cambridge: Cambridge University Press, 2002), ed. and trans. Julian Young and Kenneth Haynes, 1–56.

- 25 Morton, 'Queer Ecology', 277.
- 26 Oppermann, 'From Ecological Postmodernism to Material Ecocriticism: *Creative Materiality and Narrative Agency*', in *Material Ecocriticism*, 21–36 (28).
- 27 Maris Sõrmus, 'Naturalcultural Hybridity and Becoming: Andrus Kivirähk's *The Man Who Spoke Snakish* in a Material Ecocritical Perspective', *Ecozone* 6(1) (2015), 43–57 (45).
- 28 www.google.co.uk/?gws_rd=ssl#q=agency+definition.
- 29 Sõrmus quotes some leading material ecocritical theorists: "'We dwell in a world crisscrossed by nonhuman agencies, which combine and collide with the agentic field of our species'", [Oppermann] 'Naturalcultural Hybridity', 46. Again, however, the statement is puzzling for its utter obviousness.
- 30 Oppermann, *Material Ecocriticism*, 22.
- 31 Lowell Duckert, 'When it Rains', in *Material Ecocriticism*, 114–29 (126).
- 32 A related criticism is made in detail in Bonnie Washick and Elizabeth Wingrove's argument in 'Critical Exchange: Politics that Matter: Thinking about Power and Justice with the New Materialists', *Contemporary Political Theory* 14 (2015), 63–89. See also Alf Hornborg's criticism of the New Materialism in his 'Artifacts Have Consequences, Not Agency'.
- 33 Jason Potts and Daniel Stout, 'On the Side: Allocations of Attention in the Theoretical Moment', in *Theory Aside*, ed. Jason Potts and Daniel Stout (London: Bloomsbury, 2014), 2.
- 34 Claire Colebrook, *Death of the Posthuman: Essays on Extinction* (London: Open Humanities Press, 2014).
- 35 Pieter Vermeulen, 'Future Readers: Narrating the Human in the Anthropocene', *Textual Practice* 31 (2017), 867–85.
- 36 Max Brooks, *World War Z: An Oral History of the Zombie War* (New York: Crown, 2006).
- 37 Colebrook, 'No Symbiosis, Not Now: Why Anthropogenic Climate Change Is Not Really Human', *Oxford Literary Review* 34 (2012), 185–89 (198–99).
- 38 Alaimo, *Exposed*, 159.

6 'POSTCOLONIAL ECOCRITICISM' ... AND BEYOND?

- 1 For Chilean ecocriticism, see papers in *ISLE* 23 (2016), 105–74; also *East Asian Ecocriticism: A Critical Reader*, ed. Simon Estok and W. Kim (Basingstoke: Palgrave Macmillan, 2013); Malcolm K.

- McNee, *The Environmental Imaginary in Brazilian Poetry and Art* (Basingstoke: Palgrave, 2014); Cajetan Iheka, *Naturalizing Africa: Ecological Violence, Agency, and Postcolonial Resistance in African Literature* (Cambridge: Cambridge University Press, 2017).
- 2 For the ambivalent status of the novel as force of and in resistance to globalisation, see Mariano Suskind, 'The Globalization of the Novel and Novelization of the Global: A Critique of World Literature', in *World Literature: A Reader*, ed. Theo D'haen, César Domínguez and Mads Rosendahl Thomsen (London: Routledge, 2013), 329–52; Byron Caminero-Santangelo, *Different Shades of Green: African Literature, Environmental Justice, and Political Ecology*, Charlottesville, VA: University of Virginia Press, 2014), 7.
 - 3 Handley, 'Down Under: New World Literatures and Ecocriticism', 179–89 (184).
 - 4 Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, MA: Harvard University Press, 2011), 123.
 - 5 Ursula Heise, 'World Literature and the Environment', in *The Routledge Companion to World Literature*, ed. Theo D'haen, David Damrosch and Djelal Kadir (London: Routledge, 2011), 404–12 (404).
 - 6 Wangari Maathai, *Unbowed: One Woman's Story* (London: William Heinemann, 2007).
 - 7 Quoted in 'Introduction' to *Postcolonial Ecologies: Literatures of the Environment*, ed. Elizabeth DeLoughrey and George B. Handley (Oxford: Oxford University Press, 2011), 3–39 (19).
 - 8 Jyotirmaya Tripathy, 'Indian Environmentalism and its Fragments', in *Ecoambiguity*, 71–84 (78).
 - 9 Nadine Gordimer, *The Conservationist* (London: Penguin, 1974); *Get a Life* (London: Bloomsbury, 2005).
 - 10 Anthony Vital, '"Another Kind of Combat in the Bush": *Get a Life* and Gordimer's Critique of Ecology in a Globalized World', *English in Africa* 35(2) (2008), 89–118 (97).
 - 11 Jones, 'Kestrel Manoeuvres', 41.
 - 12 Dipesh Chakrabarty, 'Postcolonial Studies and the Challenge of Climate Change', *New Literary History* 43 (2012), 1–18 (18).
 - 13 Vital, 'Another Kind of Combat', 96.
 - 14 Julián Jiménez Heffernan, 'Unspeakable Phrases: The Tragedy of Point of View in Nadine Gordimer's *Get a Life*', *Research in African Literatures* 41(4) (2010), 87–108 (99).
 - 15 Chakrabarty, 'Minority Histories, Subaltern Pasts', www.historians.org/publications-and-directories/perspectives-on-history/november-1997/minority-histories-subaltern-pasts

- 16 Ibid.
- 17 Patrick D. Murphy, *Further Afield in the Study of Nature-Oriented Literature* (Charlottesville, VA: University of Virginia Press, 2000), 74.
- 18 Bruce Robbins, 'Uses of World Literature', in *The Routledge Companion*, 383–92 (383).
- 19 Jiang Rong, *Wolf Totem* (2004; London: Penguin, 2009).
- 20 In Mahmoud Darwish, *A River Dies of Thirst: Journals* (New York: Archipelago Books, 2009), trans. Catherine Cobham.
- 21 Upamanyu Pablo Mukherjee, *Postcolonial Environments: Nature, Culture and the Contemporary Indian Novel in English* (New York: Palgrave Macmillan, 2010), 7.
- 22 Handley, 'Down Under: New World Literatures and Ecocriticism', 188.
- 23 Michael Niblett, 'Oil on Sugar: Commodity Frontiers and Peripheral Aesthetics', in *Global Ecologies and the Environmental Humanities: Postcolonial Approaches*, ed. Elizabeth DeLoughrey, Jill Didur and Anthony Carrigan (New York: Routledge, 2015), 268–85 (269–70).
- 24 Janice Shinebourne, *The Last English Plantation* (Leeds: Peepal Tree Press, 1988).
- 25 *The Heart of Redness* (New York: Picador, 2000).
- 26 Jeffrey B. Peires, *The Dead Will Arise: Nongqawuse and the Great Xhosa Cattle-killing Movement of 1856–7* (Johannesburg: Ravan Press, 1989).
- 27 Rita Barnard, *Apartheid and Beyond: South African Writers and the Politics of Place* (Oxford: Oxford University Press, 2007), 169.
- 28 Caminero-Santangelo, *Different Shades of Green*, 97.
- 29 Handley, 'Down Under: New World Literatures and Ecocriticism', 188.
- 30 I have fleshed out such arguments in my *Ecocriticism on the Edge*, e.g. 97–114.
- 31 Suskind, 'The Globalization of the Novel', 346.
- 32 See Ning Wang, 'Global in the Local: Ecocriticism in China', *ISLE* 21 (2014), 739–47.
- 33 See Allen MacDuffie, *Victorian Literature, Energy, and the Ecological Imagination* (Cambridge: Cambridge University Press, 2014).
- 34 Kamesh Ramakrishna Aiyer, 'Dharma in the Mahabharata as a Response to Ecological Crises: A Speculation', *The Trumpeter, Journal of Ecosophy* 25(2) (2009), <http://trumpeter.athabasca.ca/index.php/trumpet/article/view/1078/1470>.

- 35 Sharae Deckard, 'Mapping the World-Ecology: Conjectures on World-Ecological Literature', www.academia.edu/2083255/.
- 36 Ibid.
- 37 World-system theory seems also implicitly condescending to people in so-called peripheries, insofar as lives are still being gauged exclusively in terms of their relation to the more powerful. See Suskind, 'The Globalization of the Novel', 342.
- 38 Ibid.

Index

- Abbey, Edward, 1–2, 4, 32, 85–6, 88
Abbot, H. Porter, 82–3
Aboriginal people, 49
activism, 2–4, 6, 29, 36, 75, 83, 85, 87–90,
131, 138–9, 141, 152, 159
Adams, Richard, 33
Adamson, Joni, 114, 122
Africa, African, 30, 32, 40, 50, 66, 92, 137
agriculture, 8, 18, 22, 35, 52, 92
Alaimo, Stacy, 6, 116–19, 121–2, 133,
136, 175
Albrecht, Glenn, 12
Amazon forest, 16, 32, 75, 91
American, *see* United States, USA
Anderson, Warwick, 120
Angus, Ian, 25–6, 158, 168
animal studies, 13, 81, 119
animal(s), 13–14, 28, 30–2, 36, 61, 63, 73,
80–1, 112, 136
Anthropocene criticism, 43, 47, 138, 148, 155
Anthropocene Working Group, 17–19, 78
Anthropocene, the, 11–13, 15, 17, 21–2, 29,
31, 33, 36–7, 41, 43–9, 51–3, 56, 59–60,
62–3, 69, 71–2, 74, 76, 78–9, 81–5, 87,
91, 95–7, 99–103, 105–7, 110–11, 114,
116, 122–4, 129, 133, 136–8, 143–6, 148,
152, 154–5, 157–8, 160–6, 169–71, 173,
175–6
as a division in human history, 21, 24,
47, 155
and modernity, 23–8, 158
in relation to Earth System science, 22
as a strictly geological term, 17–22
anthropocentric, 20, 60, 63, 67–8, 83, 122,
129, 131
anthropocentrism, 14, 112, 124, 130
anthropomorphism, 47, 81, 130, 134
Arabia, 99
Aristotle, 13, 129
Armstrong, Nancy, 103
assemblage, an, 91, 114–16, 122, 124
Australia, 32, 67, 149, 157, 167
Autin, Whitmey J., 162
avant garde, the, 77
Bachelard, Gaston, 72
Bacigalupi, Paolo, 96
Bakhtin, Mikhail, 46
Barad, Karen, 126, 174
Barnard, Rita, 154, 178
Bartosch, Roman, 84, 171
Bate, Jonathan, 58
Beck, Ulrich, 4–7, 114
Bennett, Jane, 114–16, 122, 124, 128
Bergson, Henri, 109
Bernstein, Charles, 169
Berry, Wendell, 39, 58
Bhopal, 5–7
Bikini Atoll, 5
biodiversity, 12, 19, 22, 30, 39, 42, 68
biofuels, 41
bioregional movement, the, 39
biosemiotics, 112–13
Bishop, Elizabeth, 60
Böhme, Gernot, 72, 170
Bonneuil, Christophe, 25–6, 116, 158
Borodale, Sean, 67
Boxall, Peter, 105
Boyle, T.C., 84–91, 108, 150
Brathwaite, Edward Kamau, 65–6, 68, 138
Brazil, 40, 91, 137
Brecht, Berthold, 10, 161
Bristow, Tom, 67, 169
Britain, 8, 31
Bryon, Lord, 123
Buell, Frederick, 172
Buell, Lawrence, 28, 80, 92, 163, 165, 172
Bunting, Basil, 67
Burnside, John, 67
Cahoone, Lawrence, 23
Cai Guo Qiang, 35

- Calarco, Matthew, 13, 119, 161
 Cameron, James, 114
 Caminero-Santangelo, Byron, 95, 141, 153, 155
 Canada, 155
 canon, the, 11, 146
 canonical, 14, 67, 91
 capitalism, 2, 20, 25, 28, 39–40, 83, 85, 101–2, 118, 138, 144, 148–50, 157, 173
 Capitalocene, 20, 24, 101, 163
 Caribbean, the, 65, 79, 100, 147
 Carroll, Bruce, 35
 Carson, Rachel, 1, 4, 14
 Chakrabarty, Dipesh, 26–7, 40, 145–6, 163
 characterisation, modes of, 78, 84, 91, 94, 102, 106, 109
 Chaucer, Geoffrey, 121
 Chile, 137, 176
 China, 26, 28, 91, 140, 147
 Chisholm, Dianne, 73–4
 Clare, John, 7–12, 39, 149, 161
 climate change, 25, 28, 38, 41–2, 50–1, 53–6, 59–60, 67, 73–4, 79–80, 84–5, 88–9, 91, 98, 100, 106–8, 117, 143, 152, 170
 climate change criticism, a, 28
 Cohen, Jerome, 130
 Cold War, 3
 Colebrook, Claire, 133–6
 Coleridge, Samuel Taylor, 57
 colonialism, 24, 147–9, 155
 comic, the, 108
 complexity, 15, 17, 22, 50, 52, 59–60, 62, 81, 83–4, 89, 107, 115–16, 123, 125, 129, 140–1, 152, 154, 169, 174
 Conrad, Joseph, 151
 Conway, Eric, 18, 78, 135
 Coole, Diana, 112, 129, 174
 Critchley, Simon, 109
 Crutzen, P., 162
 Culler, Jonathan, 108
 cultural imaginary, the, 86, 131
 Currier, Sebastian, 133

 Darwish, Mahmoud, 147, 178
 Dator, Jim, 40
 Davies, Jeremy, 19–20, 25–6, 43, 158
 de Bruyn, Ben, 173
 de Chardin, Teilhard, 174
 De Wever, P., 20–1, 162
 Debord, Guy, 99
 Deckard, Sharae, 157–8
 deep ecologists, 138
 deep time, 17, 21, 41, 43, 46–7, 104
 deforestation, 9, 41, 51, 83, 138
 DeLillo, Don, 103–6, 173–4
 DeLoughrey, Elizabeth, 99
 democracy, 2, 25, 40, 159
 denial, 79, 98, 102
 Derrida, Jacques, 29, 175
 Descartes, René, Cartesian, 13, 129, 131, 136
 Dickinson, Emily, 34, 61, 63, 69
 Dongaria Kandha tribes, 140
 Dooren, Thomas Van, 81
 Douglas, Kate, 164
 Dow, Katherine, 164
 Drenthen, Martin, 31
 Dryden, John, 121
 Duckert, Lowell, 130
 Durand, Marcella, 75
 Dwyer, Jim, 171

 Earth First!, 1, 4, 84, 88
 Earth System science, 22
 Earth system, the, 11, 22, 85
 Earth's systems, 27
 Ebola, 50–1
 ecofeminism, 3, 161
 ecophenomenological poetry, 63
 ecopoetics, 57
 ecopoetry, 57–77, 105
 Elder, John, 169
 Eliot, T.S., 67
 emergence, emergent, 84, 115, 126
 enclosures, the, 7–8, 149
 Engelke, Peter, 3
 England, 7, 39, 52, 67, 149
 Enlightenment, 23, 25–6, 159
 environmental
 humanities, 40, 111
 injustice, 25, 90, 138
 justice, 3, 27, 118, 140
 non-fiction, 58, 137
 poetry, 64–5
 Erickson, Bruce, 33, 164
 extinction, 12–13, 19, 22, 29–30, 80–1, 102, 117, 148

 fantastic, the, 43–4, 78, 96, 99–100, 110, 121, 158–9
 Farrier, David, 57

- feminism, 3, 48
 feminist criticism, 28
 feminist philosophy, 112
 Ferber, Edna, 93
 Finney, S., 20–1, 162
 Fortey, Richard, 43
 fossil fuels, 23, 26, 29, 31, 93, 94
 Foster, John Bellamy, 25
 Fressoz, Jean-Baptiste, 25–6, 116, 158
 Friends of the Earth, 39
 Frost, Samantha, 129, 174

 Galeano, Juan Carlos, 114
 Garrard, Greg, 3, 28, 57, 59, 62, 64–6, 163
 genre fiction, 78, 96, 98–100, 103, 159, 172
 geocriticism, 43
 geoengineering, 23, 30, 53
 geological, 17–22, 24, 28, 42, 45–7, 49, 68,
 104–5, 124, 135, 155, 162, 166
 geology, 18–21, 43, 45–7, 111, 166
 Germany, 3
 Ghosh, Amitav, 91–2, 96–9, 157
 Gidal, Eric, 43–6, 56, 124, 166
 Gifford, Terry, 3, 57
 Gladwin, Derek, 161
 Global South, the, 25, 120, 140
 global warming, 6, 12, 27, 29, 35, 38, 54, 59,
 86, 88, 90, 92, 98, 108, 110
 Gordimer, Nadine, 141–2, 144–5, 152,
 155, 177
 Gordon, David, 104
 Gowdy, Barbara, 81
 Graham, Jorie, 67
 great acceleration, the, 19, 92
 great wildlife spectacle, 5, 11
 Greenpeace, 5–7
 Griffin, David Ray, 132
 Griffiths, Matthew, 59, 67
 Grusin, Richard, 47
 Guha, Ranajit, 145–6

 Habila, Helon, 95, 138
 Hamilton, Clive, 24, 26
 Handley, George B., 40, 138, 149, 155, 177
 Haraway, Donna, 28, 33, 48, 140, 163
 Hardy, Thomas, 39, 47
 Head, Dominic, 84
 Heaney, Seamus, 64, 66
 Heffernan, Julián Jiménez, 145
 Heidegger, Martin, 175

 Heise, Ursula, 36, 40–1, 96, 139, 146–7,
 155, 165
 Herder, Johann Gottfried, 44
 Herman, David, 171
 Hess, Scott, 161
 heterosexuality, 32–3
 Higgins, David, 122–4, 130, 133
 Hillman, Brenda, 71–2, 75, 169–70
 historicism, 124
 Hitchcock, Alfred, 104
 Hoagland, Tony, 75
 Hoffmeyer, Jesper, 113
 Hogan, Linda, 80
 Holbrook, John M., 162
 Holocene, 17, 20, 22, 35–6, 42, 158
 Homer, 42
 Hornborg, Alf, 113, 176
 Housman, A.E., 33–4, 42, 59, 165
 Hughes, Ted, 63
 Hulme, Keri, 99
 human exceptionalism, 14, 113, 134
 human/animal, the human/animal
 distinction, 13, 31–2, 69, 101,
 118–19, 136
 humanism, 118, 135
 humanities, 13, 15, 19, 21, 26, 40, 47, 123,
 132, 134
 Hutton, James, viii, 45
 hyperobject, 38, 70–1

 identity politics, 91, 97–8
 Ifowodo, Ogaga, 8
 imagination, crisis of, 84
 India, 28, 79, 99, 137, 139–41, 147, 149
 inhumanism, 133–6, 159
 International Commission on
 Stratigraphy, 162
 International Geological
 Congress, 17, 20
 Iovino, Serenella, 111, 113–14, 116, 174
 Ireland, 65
 Israel, 147

 James, Erin, 79–81
 James, Henry, 109
 Jameson, Fredric, 96
 Jefferson, Thomas, 86
 Johns-Putra, Adeline, 167
 Jones, Carl, 30, 143
 Jones, David, 67

- Kanafani, Ghassan, 94
 Kant, Immanuel, 129
 Kenya, 139, 145
 Killingsworth, M. Jimmie, 160
 King, Daniel, 91
 Kingsolver, Barbara, 78–9, 110
 Kinsella, John, 67
 Kirksey, Eben, 164
 Knickerbocker, Scott, 60–2, 69
 Kúchler, Uwe, 38
- Leopold, Aldo, 9, 86, 88, 171
 Lidström, Susanna, 59, 62, 64–6
 Lin, Maya, 35
 local, the, 39, 42, 137, 144
 localism, 41
 Lockley, R.M., 33
 Lorimer, Jamie, 30
 Lukács, György, 103
- Maathai, Wangari, 139
 Macfarlane, Robert, 12, 74, 81, 133, 161, 171
 Macpherson, James, 44, 46
 magic realism, 99–100, 121
 Mahon, Derek, 73
 Mandela, Nelson, 139
 Markley, Robert, 167
 Marx, Karl, 15
 Marxist, 3, 15, 25, 28, 147
 Mary Mattingly, 35
 material ecocriticism, 15, 111–36
 as academic politics, 131–2
 Mazzeno, Lawrence W., 161
 McCarthy, Tom, 105
 McGurl, Mark, 40, 96, 98, 172
 McKibben, Bill, 86, 110
 McLarney, Ellen, 172
 McNeill, J.R., 3, 18–19
 McSweeney, Joeyelle, 57
 Mda, Zakes, 150–4
 Mentz, Steve, 117
 Meyer, Stephen, 68
 Miéville, China, 157
 Modernism, 67
 modernist, 60, 75
 Modernist, 59
 modernity, 20, 23–6, 46, 95, 101, 158
 Moore, Jason M., 20, 24, 101, 158, 163
 Morgan, Benjamin, 47
 Morrison, Ronald D., 161
- Mortimer-Sandilands, Catriona, 33, 164
 Morton, Timothy, 34–5, 38, 40, 68, 70, 125–7, 130, 165, 175
 Muir, John, 86
 Mukherjee, Upamanyu Pablo, 148, 158
 Munif, Abd al-Rahman, 9, 94, 99
 Murphy, Patrick D., 146
- Napoleon Buonaparte, 123
 narrative ‘closure’, 154
 narrative, nature and limits of, 38, 78–80, 83–5, 87, 90, 104–5, 108, 124–7, 133, 150, 153
 Native American, 80, 114, 122
 natural history, 33, 169
 natural, the, 29, 39, 58–9, 68, 137
 nature poetry, 59, 71
 nature writing, 12, 149
 Nature, 30–6
 nature/culture boundary, the, 30–1, 67, 111–12
 neo-colonial, 8, 25, 95, 141, 149, 153
 neo-colonialism, 24, 83, 149
 New Materialism, 113–14, 129, 134–5, 176
 Newcomen, Thomas, 18
 Niblett, Michael, 100, 149, 157
 Nigeria, 94–5, 139
 Nixon, Rob, 138–9, 177
 nonfiction, 59, 121, 139
 Nongqawuse, 150, 152–3, 178
 non-human agency, 10, 24, 83, 94, 99, 112, 134
 Norton, Bryan G., 50
 novel, the, 2, 15, 53–4, 59–60, 78–81, 84, 88, 91, 94, 96–7, 99–100, 102–6, 110, 121, 128, 137, 142, 150, 155–7, 177–8
- object-oriented ontology, 175
 ocean, 11, 43, 62, 71, 117, 119
 ocean acidification, 22, 38, 117, 135
 ocean(s), 116–19
 oil, 9, 12, 79, 91–5, 117, 171
 Olson, Charles, 67
 Oma, Kristin Armstong, 164
 Oppermann, Serpil, 111, 114, 116, 131, 174, 176
 Oreskes, Naomi, 18, 78, 135
 Ossian, 44–7, 56, 124, 166
 Oswald, Alice, 67, 165, 168
 overpopulation, 27–8, 31, 52, 83, 85, 92

- palm oil, 9, 51
 Palmer, Jacqueline S., 160
 Panamanian golden frog, 30
 pastoral, versions of, 57
 patriarchal, 3, 90
 patriarchy, 3, 33, 83
 Peacock, Laurel, 71
 Peires, Jeff, 150
 Peters, Katrin, 6
 petrofiction, 91, 95, 147
 petro-magic-realism, 94
 Phillips, Dana, 58, 119–22, 133
 plastic, 6, 18, 29, 92, 115, 117, 121–2, 135
 Plath, Sylvia, 60
 poetic language, 60
 Polemocene, 20
 popular science, 43
 postcolonial, 25, 42, 78, 99–101
 postcolonial ecocriticism, 137–59
 posthuman, 54, 76, 87, 131, 134–5
 posthumanism, 13, 134–5
 postmodern, 28, 95, 116
 Potts, Jason, 176
 Pound, Ezra, 67
 prose narrative, 59
 Prynne, Jeremy, 76
 public opinion, 2, 86–7
 Pynchon, Thomas, 120

 quantum mechanics, 116
 queer theory, 33, 48, 127, 165

 Raffles, Sir Stamford, 123–4
 Ramanujan, Krishna, 164
 Rattasepp, Silver, 164
 Reading, Peter, 67
 realism, 53, 60, 78, 87, 95, 97, 99, 101, 105, 126, 154–5, 172–3
 realist novel, 55, 88, 93, 97, 109
 refugees, 24
 Reilly, Evelyn, 57, 70, 75
 rewilding, 30–1
 Rigby, Kate, 48–9, 51–2, 56, 156
 Robbins, Bruce, 146
 Robinson, Kim Stanley, 53–6, 63, 96, 99, 102, 106, 110, 156, 167, 173
 Rockström, Johan, 22, 50–1, 162, 167
 Romantic humanism, humanist, 41, 55, 58
 Romantic-humanist ecocriticism, 50
 Romanticism, Romantic, 56, 59, 63, 100, 134, 137, 143, 156

 Ronda, Margaret, 72
 Rong, Jiang, 147
 Roy, Arundhati, 139
 Rudd, Gillian, 161
 Ruddiman, William F., 162

 Santal the, 145
 Saro-Wiwa, Ken, 79, 94, 139, 172
 scalar literacy, 40, 42–3, 53, 84
 scalar translation, 49, 52
 scale, 84, 87, 105–10, 118, 145
 global, 15, 31, 39, 53, 67, 80, 84–5, 154
 human, 46–7, 49, 62, 79, 81, 98, 103
 planetary, 84, 91, 156
 world, 156, 159
 scale critique, 40–1, 54
 scale-framing, 88, 102
 Schwarz, Roberto, 149
 science, 15, 17–18, 31, 33, 45, 47, 54, 78, 96, 111–12, 118, 121, 128, 145
 science fiction, 17, 78, 96–7, 102, 122
 Scotland, 44–5, 67
 Self, Will, 75, 89–90, 101, 106–10, 154, 172, 174–5
 Servais, Thomas, 162
 Sexton, Melissa, 100
 Shakespeare, William, 42, 66
 Shelley, Mary, 123
 Shelley, P.B., 123
 Shinebourne, Janice, 149, 157
 shit, 120–1
 short story, 59, 106, 108
 Shubin, Neil, 118
 Silent Spring, 14
 Simpson, Helen, 108
 Sinclair, Upton, 92–3
 Sinha, Indra, 6–7, 138
 Skinner, Jonathan, 67–9, 76, 169
 Smith, Ben, 67, 169, 173
 Snyder, Gary, 160
 social ecologists, 3
 Solnick, Sam, 67, 73, 76, 169
 Sörmus, Maris, 128, 176
 South Africa, 141–3, 150–1
 Spahr, Juliana, 73–4, 77, 170
 speculative realism, 78, 96
 steam engine, 18, 128
 Steffen, W., 22, 162
 Stevens, George, 93
 Stevens, Wallace, 60, 67
 Stigen-Drangsholt, Janne, 168

- Stoekl, Alan, 94
 Stout, Daniel, 176
 Sullivan, Helen I, 57
 surrealists, the, 77
 Suskind, Marino, 156, 158, 177, 179

 Tambora catastrophe, the, 122–4, 130
 Thanatocene, 20
 theatre, 59, 122
 Thermatocene, 20
 Thomas, Edward, 34
 Thomashow, Mitchell, 42–3, 49, 171
 Thoreau, Henry, 14, 39, 56, 86
 Tønnessen, Morten, 164
 transcorporeality, 117–19
 trauma, 7, 65, 103, 105, 151
 Trexler, Adam, 85, 88, 90–1, 96
 Tripathy, Jyotirmaya, 140–1
 Trump, Donald, 55
 Trumpocene, 20
 turn to things, 10, 15, 91
 Turrell, James, 125–6, 130

 Ulstein, Guy, 97
 ultrahumanism, 134
 unconformities, 45–6, 81
 United States, USA, 1, 32, 54, 56, 86, 92, 120, 137, 151
 Usher, Phillip John, 162

 value, 14, 23, 47, 58, 79, 132, 136
 crisis of, 14
 values, 2, 4, 12, 14–5, 29, 36, 49, 57, 63, 90, 93, 99–100, 138, 143, 145, 150, 154, 159

 Vermeulen, Pieter, 103–6, 124, 127, 135, 157, 174
 Vital, Anthony, 141

 Wallace, Alfred Russel, 169
 Wallace, Molly, 4–7, 160–1
 Walsh, Richard, 108
 Washick, Bonnie, 176
 water disputes, 96, 98, 147
 Watt, James, 18
 Wen Jiabao, 26
 Wenzel, Jennifer, 94
 Whitman, Walt, 34
 Wilbur, Richard, 60
 wilderness, 11–12, 32, 37, 68, 120, 143
 Williams, M., 162
 Williams, William Carlos, 67–8
 Wingrove, Elizabeth, 176
 Wolfe, Cary, 14, 161
 Woolf, Virginia, 81
 Worden, Daniel, 92
 Wordsworth, Dorothy, 161
 Wordsworth, William, 11, 39, 57, 68, 161
 world literature, 146–7, 156
 world-systems theory, 148–9, 158, 179
 Wright, Judith, 48–9, 51, 56, 156, 167

 Yamashita, Karen Tei, 100–1, 110, 122
 Yirrkala people, 149

 Zalasiewicz, J., 162
 Zephaniah, Benjamin, 76