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Roundtable

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ROUNDTABLE

Contemporary Studies Network Roundtable: Responding to Robert Macfarlane's 'Generation Anthropocene'

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In April 2016, *The Guardian* published 'Generation Anthropocene: How humans have altered the planet forever' by the celebrated academic and nature writer Robert Macfarlane. Reflecting on the article's importance as a critical experiment and, perhaps, a vital form of public engagement, Contemporary Studies Network (CSN) asked six of its members, working across very different areas of literary and cultural studies, to respond to and extend Macfarlane's article, mapping the different ways in which literary scholars might approach the age of the Anthropocene. Conducted via email, this roundtable conversation asks to what extent the Anthropocene marks a new era in literary criticism, how exactly it extends pre-existing strands of ecocriticism and trauma studies, and what the global scope of the term might be beyond the confines of the Western literary canon. Discussion ranges from issues of temporality to genre and form and it also addresses Macfarlane's rhetoric, his call to arms for those working in the humanities, for a more comprehensive investigation in to the roles of literature and art in responding to and representing what may become a new epoch.

Introduction

The Anthropocene is generally understood as our current geological epoch, a period in which human activity has become the dominant force on climate and environment. While Bruno Latour describes it as ‘the best alternative we have to usher us out of the notion of modernization’ (Latour 2015: 145), as a concept the Anthropocene blurs conventional distinctions between human and geological history and, as a result, it has been investigated and defined differently across natural and social sciences disciplines as well as more recently in the humanities.

When the celebrated nature and travel writer Robert Macfarlane published ‘Generation Anthropocene: How humans have altered the planet forever’ in *The Guardian* in April 2016, it felt like an important moment to many scholars working in literary studies. This is partly because the Anthropocene has been a ubiquitous point of reference in literary scholarship for the last three or four years.¹ In just under 6,000 words, Macfarlane builds on his ‘Desecration Phrasebook’ and, moving discursively from John Clare to Frederic Jameson, discusses critical terms that are routinely attached to the Anthropocene: ‘solastalgia’, ‘deep time’, ‘apex-guilt’, ‘shadowtime’, and ‘stuplimity’. Most importantly, perhaps, he also recognises the dangers of the Anthropocene’s ‘ubiquity as a cultural shorthand’ and of the already evident phenomenon of commentators becoming ‘fatigued by its imprecisions’ – a problem that seems endemic with many trends in cultural criticism. ‘Generation Anthropocene’ is, in this sense, an ambitious, impactful, and notably accessible essay that feels important precisely because Macfarlane interrogates the burgeoning critical lexicon of the Anthropocene whilst also attempting to identify how cultural texts might represent or engage with this formulation of our current geological age.

¹ For recent and existing scholarship on the Anthropocene see Trexler (2015) and Clark (2015), as well as special issues of *Environmental Humanities* (2014) and forthcoming issues of *Modern Fiction Studies* (2017), *Concentric: Literary and Cultural Studies* (2017), *C21 Literature: Journal of 21st-Century Writings* (2017), and *Studies in the Novel* (2018).

In May 2016, Contemporary Studies Network (CSN)² launched an email 'roundtable' discussion to extend the gestures articulated in Macfarlane's essay (reproduced with permission below, before the roundtable discussion). Enlisting scholars working in six distinct areas of literary studies, we wanted to discuss and respond to Macfarlane's article, mimicking the open and exploratory tone of the essay but also fleshing out current ideas and perspectives on the Anthropocene in the humanities. Dr. Daniel King (University of Derby), a researcher working on the editorial process of Cormac McCarthy, began the discussion, noting McCarthy's relevance to Macfarlane's essay as well as the possibility of an Anthropocenic literature more generally. From there, Dr. Diletta De Cristofaro (De Montfort University) emphasised the 'temporal and political questions of the Anthropocene', drawing on her research expertise in representations of apocalypse and the philosophy of time before passing the questions to Dr. Joanne Scott (University of Salford) who, amongst many keen observations relating to her position as a lecturer and practitioner of performance, stressed the Anthropocene's necessary engagement with 'deep time'. Dr. Dan Cordle (Nottingham Trent University), who works on nuclear fiction, noted how the Anthropocene constitutes a way of looking 'beyond the immediate nuclear emergencies of the Cold War to the longer term resonances of nuclear materials'. Finally, Dr. Neelam Srivastava (Newcastle University), Senior Lecturer in Postcolonial Literature, invoked the potentiality of an Anthropocenic literature 'to kick-start a revolution in thinking about our planet' whilst Andrew Rowcroft (University of Lincoln), a doctoral researcher of contemporary literature and Marxist political philosophy, built on a discussion of the ethical and political standpoints throughout the roundtable to urge for critical distinction between the two terms.

Rachel Sykes and Arin Keeble

Chair and Vice-Chair of Contemporary Studies Network (CSN)

² Contemporary Studies Network aims to provide a platform for discussion of emerging research and to support networking and public engagement opportunities amongst scholars with an interest in contemporary literature, culture, politics, and critical theory, who are based in the Midlands and North of the United Kingdom. See: <https://contemporarystudiesnetwork.wordpress.com/>.

Participant Biographies

Dr. Daniel Cordle is Reader in English and American Literature at Nottingham Trent University. His research focuses on nuclear literature and on the relationship between literature, science and the 'two cultures' debate. He is the author of *Postmodern Postures: Literature, Science and the Two Cultures Debate* (Ashgate, 1999) and *States of Suspense: The Nuclear Age, Postmodernism and United States Fiction and Prose* (Manchester University Press, 2008). His latest book, *Late Cold War Culture: The Nuclear 1980s*, will be published by Palgrave Macmillan in 2017.

Dr. Diletta De Cristofaro Lecturer in English at De Montfort University. Her research takes place at the intersection of literary studies and philosophy to interrogate the way in which contemporary narratives play a key role in our construction of time and history. She is working on her first monograph of the contemporary post-apocalyptic novel, has a forthcoming essay on *The Road* in a collection published by North Carolina University Press, and is co-editing with Daniel Cordle a special issue of *C21 Literature: Journal of 21st-Century Writings* on "The Literature of the Anthropocene".

Dr. Daniel King is an Associate Lecturer at the University of Derby. His first book, *Cormac McCarthy's Literary Evolution*, was published in 2016 by Tennessee University Press and his work on Cormac McCarthy and Jaime Hernandez has been published in *Comparative American Studies, Literature and Medicine*, and the *International Journal of Comic Art*. He is currently working on an archival project looking at the career of Albert Erskine and the role and importance of the post war literary editor.

Andrew Rowcroft is a PhD student in English, and Associate Lecturer in English at the University of Lincoln and Nottingham Trent University. His thesis focuses on twenty-first century British & American Fiction and Marxist Critical Theory. He is

coordinator for the Marx Research Seminar, and is currently editing a Special Collection of Open Library of Humanities on the topic of “*What’s Left? Marxism, Literature and Culture in the 21st Century*”.

Dr. Joanne Scott is a live media practitioner-researcher and lecturer in performance at the University of Salford. Jo’s research explores the creation and experience of performance events where media are mixed live. She has presented her practice-as-research in a variety of contexts from Salford to San Francisco, and is currently working on a project that explores musical history, place and autobiography. Her first monograph, *Intermedial Praxis and PaR*, was published by Palgrave in Summer 2016. You can find details of her work at www.joanneemascott.com.

Dr. Neelam Srivastava is Senior Lecturer in Postcolonial Literature at Newcastle University, UK. She is Associate Editor of *Interventions: International Journal of Postcolonial Studies*. Her main areas of research are postcolonial Italian cultures, including the history of Italian anti-colonialism; contemporary Indian literature, including Dalit literature; and postcolonial theory. She is the co-editor of *The Postcolonial Gramsci* (Routledge, 2012), and has recently completed an edited collection of essays entitled *Indian Literature and the World: Multilingualism, Translation and the Public Sphere*, forthcoming with Palgrave (2017).

Generation Anthropocene: How humans have altered the planet for ever³

Robert Macfarlane

We are living in the Anthropocene age, in which human influence on the planet is so profound – and terrifying – it will leave its legacy for millennia. Politicians and scientists have had their say, but how are writers and artists responding to this crisis?

Friday 1 April 2016 12.00 BST Last modified on Tuesday 20 September 2016 10.50

³ Macfarlane’s article was originally published in *The Guardian*, 1 April 2016: <https://www.theguardian.com/books/2016/apr/01/generation-anthropocene-altered-planet-for-ever> (Last accessed 31 January 2017). The article is reproduced here with permission from *The Guardian*.”



Illustration by Eric Petersen.

In 2003 the Australian philosopher Glenn Albrecht coined the term solastalgia⁴ to mean a 'form of psychic or existential distress caused by environmental change'. Albrecht was studying the effects of long-term drought and large-scale mining activity on communities in New South Wales, when he realised that no word existed to describe the unhappiness of people whose landscapes were being transformed about them by forces beyond their control. He proposed his new term to describe this distinctive kind of homesickness.

Where the pain of nostalgia arises from moving away, the pain of solastalgia arises from staying put. Where the pain of nostalgia can be mitigated by return, the pain of solastalgia tends to be irreversible. Solastalgia is not a malady specific to the present – we might think of John Clare⁵ as a solastalgic poet, witnessing his native Northamptonshire countryside disrupted by enclosure in the 1810s – but it has

⁴ See Glenn Albrecht's TEDxSydney lecture 'Environment Change, Distress & Human Emotion Solastalgia': <https://www.youtube.com/watch?v=-GUGW8rOpLY> (Last accessed 23 November 2016).

⁵ See George Monbiot, 'John Clare, the poet of the environmental crisis – 200 years ago', *The Guardian*, 9 July 2012: <https://www.theguardian.com/commentisfree/2012/jul/09/john-clare-poetry> (Last accessed 23 November 2016).

flourished recently. 'A worldwide increase in ecosystem distress syndromes', wrote Albrecht, is 'matched by a corresponding increase in human distress syndromes'. Solastalgia speaks of a modern uncanny, in which a familiar place is rendered unrecognisable by climate change or corporate action: the home become suddenly unhomey around its inhabitants.

Albrecht's coinage is part of an emerging lexis for what we are increasingly calling the 'Anthropocene': the new epoch of geological time in which human activity is considered such a powerful influence on the environment, climate and ecology of the planet that it will leave a long-term signature in the strata record. And what a signature it will be. We have bored 50m kilometres of holes in our search for oil. We remove mountain tops to get at the coal they contain. The oceans dance with billions of tiny plastic beads. Weaponry tests have dispersed artificial radionuclides globally. The burning of rainforests for monoculture production sends out killing smog-palls that settle into the sediment across entire countries. We have become titanic geological agents, our legacy legible for millennia to come.

The idea of the Anthropocene asks hard questions of us. Temporally, it requires that we imagine ourselves inhabitants not just of a human lifetime or generation, but also of 'deep time' – the dizzyingly profound eras of Earth history that extend both behind and ahead of the present. Politically, it lays bare some of the complex cross-weaves of vulnerability and culpability that exist between us and other species, as well as between humans now and humans to come. Conceptually, it warrants us to consider once again whether – in Fredric Jameson's⁶ phrase – 'the modernisation process is complete, and nature is gone for good', leaving nothing but us.

⁶ See Nicholas Lezard, 'The Modernist Papers by Fredric Jameson review – weighty essays on literature and art', *The Guardian*, 15 March 2016: <https://www.theguardian.com/books/2016/mar/15/modernist-papers-fredric-jameson-review> (Last accessed 23 November 2016).



Rainforest burning in Brazil, 1989. Photograph: Sipa Press/Rex Features.

There are good reasons to be sceptical of the epitaphic impulse to declare ‘the end of nature’. There are also good reasons to be sceptical of the Anthropocene’s absolutism, the political presumptions it encodes, and the specific histories of power and violence that it masks. But the Anthropocene is a massively forceful concept, and as such it bears detailed thinking through. Though it has its origin in the Earth sciences and advanced computational technologies, its consequences have rippled across global culture during the last 15 years. Conservationists, environmentalists, policymakers, artists, activists, writers, historians, political and cultural theorists, as well as scientists and social scientists in many specialisms, are all responding to its implications. A Stanford University team has boldly proposed that – living as we are through the last years of one Earth epoch, and the birth of another – we belong to ‘Generation Anthropocene’.

Literature and art are confronted with particular challenges by the idea of the Anthropocene. Old forms of representation are experiencing drastic new pressures and being tasked with daunting new responsibilities. How might a novel or a poem possibly account for our authorship of global-scale environmental change across

millennia – let alone shape the nature of that change? The indifferent scale of the Anthropocene can induce a crushing sense of the cultural sphere's impotence.



Plastic and rubbish floating in the ocean. Photograph: Gary Bell/zefa/Corbis.

Yet as the notion of a world beyond us has become difficult to sustain, so a need has grown for fresh vocabularies and narratives that might account for the kinds of relation and responsibility in which we find ourselves entangled. 'Nature', Raymond Williams famously wrote in *Keywords* (1976),⁷ 'is perhaps the most complex word in the language'. Four decades on, there is no 'perhaps' about it.

Projects are presently under way around the world to gain the most basic of purchases on the Anthropocene – a lexis with which to reckon it. Cultural anthropologists in America have begun a glossary for what they call 'an Anthropocene as yet unseen', intended as a 'resource' for confronting the 'urgent concerns of the present moment'. There, familiar terms – petroleum, melt, distribution, dream – are made strange again, vested with new resilience or menace when viewed through the 'global optic' of the Anthropocene.

⁷ See Andy Beckett, 'Battles over language', *The Guardian*, 15 February 2014: <https://www.theguardian.com/books/2014/feb/15/keywords-raymond-williams-battles-language> (Last accessed 23 November 2016).

Last year I started the construction of a crowdsourced Anthropocene glossary called the 'Desecration Phrasebook', and in 2014 The Bureau of Linguistical Reality⁸ was founded 'for the purpose of collecting, translating and creating a new vocabulary for the Anthropocene'. Albrecht's solastalgia is one of the bureau's terms, along with 'stieg', 'apex-guilt' and 'shadowtime', the latter meaning 'the sense of living in two or more orders of temporal scale simultaneously' – an acknowledgment of the out-of-jointness provoked by Anthropocene awareness. Many of these words are, clearly, ugly coinages for an ugly epoch. Taken in sum, they speak of our stuttering attempts to describe just what it is we have done.



The word 'Anthropocene' itself entered the *Oxford English Dictionary* surprisingly late, along with 'selfie' and 'upcycle', in June 2014 – 15 years after it is generally agreed to have first been used in its popular sense.

In 1999, at a conference in Mexico City on the Holocene – the Earth epoch we at present officially inhabit, beginning around 11,700 years ago – the Nobel prize-winning atmospheric chemist Paul Crutzen was struck by the inaccuracy of the Holocene designation. 'I suddenly thought this was wrong', he later recalled. 'The world has changed too much. So I said, 'No, we are in the Anthropocene'. I just made the word up on the spur of the moment. But it seems to have stuck'.

The following year, Crutzen and Eugene Stoermer – an American diatom specialist who had been using the term informally since the 1980s – jointly published an article proposing that the Anthropocene should be considered a new Earth epoch, on the grounds that 'mankind will remain a major geological force for many millennia, maybe millions of years to come'.⁹ The scientific community took the Crutzen-Stoermer proposal seriously enough to submit it to the rigours of the stratigraphers.

⁸ See The Bureau of Linguistical reality's website: <https://bureauoflinguisticalreality.com/> (Last accessed 23 November 2016).

⁹ P. J. Crutzen, 'The 'Anthropocene' in *Earth System Science in the Anthropocene: Emerging Issues and Problems*, Ed. Eckart Ehlers and Thomas Krafft (Berlin: Springer-Verlag, 2006), pp. 13–18 (p. 17).

Stratigraphy is an awesomely stringent discipline. Stratigraphers are at once the archivists, monks and philosophers of the Earth sciences. Their specialism is the division of deep time into aeons, eras, periods, epochs and stages, and the establishment of temporal limits for those divisions and their subdivisions. Their bible is the International Chronostratigraphic Chart,¹⁰ the beautiful document that archives Earth history from the present back to the ‘informal’ aeon of the Hadean, between 4bn and 4.6bn years ago (‘informal’ because vanishingly little is known about it). Being a geo-geek, I sometimes mutter the mnemonics of the ICS as I cycle to work, trying to get the sequences straight: Cows Often Sit Down Carefully. Perhaps Their Joints Creak? – Cambrian, Ordovician, Silurian, Devonian, Carboniferous, Permian, Triassic, Jurassic, Cretaceous . . .

The Anthropocene Working Group of the Subcommission on Quaternary Stratigraphy¹¹ – a title straight out of *Gormenghast* – was created in 2009. It was charged with delivering two recommendations: whether the Anthropocene should be formalised as an epoch and, if so, when it began. Among the baselines considered by the group have been the first recorded use of fire by hominins around 1.8m years ago, the dawn of agriculture around 8,000 years ago and the Industrial Revolution.

The group’s report is due within months. Recent publications indicate that they will recommend the designation of the Anthropocene, and that the ‘stratigraphically optimal’ temporal limit will be located somewhere in the mid-20th century. This places the start of the Anthropocene simultaneous with the start of the nuclear age. It also coincides with the so-called ‘Great Acceleration’, when massive increases occurred in population, carbon emissions, species invasions and extinctions, and when the production and discard of metals, concrete and plastics boomed.

¹⁰ The International Chronostratigraphic Chart, *International Commission on Stratigraphy* website: <http://www.stratigraphy.org/index.php/ics-chart-timescale> (Last accessed 23 November 2016).

¹¹ See ‘Working Group on the ‘Anthropocene’ on the *Subcommission on Quaternary Stratigraphy* website: <http://quaternary.stratigraphy.org/workinggroups/anthropocene/> (Last accessed 23 November 2016).



Manila Bay in the Philippines covered with plastic bags and rubbish. Photograph: Joshua Mark Dalupang / EPA.

Plastics in particular are being taken as a key marker for the Anthropocene, giving rise to the inevitable nickname of the 'Plasticene'. We currently produce around 100m tonnes of plastic globally each year. Because plastics are inert and difficult to degrade, some of this plastic material will find its way into the strata record. Among the future fossils of the Anthropocene, therefore, might be the trace forms not only of megafauna and nano-planktons, but also shampoo bottles and deodorant caps – the strata that contain them precisely dateable with reference to the product-design archives of multinationals. 'What will survive of us is love', wrote Philip Larkin.¹² Wrong. What will survive of us is plastic – and lead-207, the stable isotope at the end of the uranium-235 decay chain.



¹² See Jeremy Axelrod, 'Philip Larkin: 'An Arundel Tomb': Poem Guide', n. date, *The Poetry Foundation*: <https://www.poetryfoundation.org/resources/learning/core-poems/detail/47594#guide> (Last accessed 23 November 2016).

The Deutsches Museum in Munich is currently hosting 'An Anthropocene Wunderkammer', which it calls 'the first major exhibition in the world' to take the Anthropocene as its theme. Among the exhibits is a remarkable work by the American writer and conservation biologist Julianne Lutz Warren,¹³ entitled 'Hopes Echo'. It concerns the huia, an exquisite bird of New Zealand that was made extinct in the early 20th century due to habitat destruction, introduced predators and overhunting for its black and ivory tail feathers. The huia vanished before field-recording technologies existed, but a version of its song has survived by means of an eerie series of preservations: a sound fossil. In order to lure the birds to their snares, the Maori people learned to mimic the huia song. This mimicked song was passed down between generations, a practice that continued even after the huia was gone. In 1954 a pakeha (a European New Zealander) called RAL Bateley made a recording of a Maori man, Henare Hamana, whistling his imitation of the huia's call.¹⁴

Warren's exhibit makes Bateley's crackly recording available, and her accompanying text unfolds the complexities of its sonic strata. It is, as Warren puts it, 'a soundtrack of the sacred voices of extinct birds echoing in that of a dead man echoing out of a machine echoing through the world today'.¹⁵ The intellectual elegance of her work – and its exemplary quality as an Anthropocene-aware artefact – lies in its subtle tracing of the technological and imperial histories involved in a single extinction event and its residue.

Anthropocene art is, unsurprisingly, obsessed with loss and disappearance. We are living through what is popularly known as the 'sixth great extinction'.¹⁶ A third

¹³ See Julianne Lutz Warren's staff page on the *Center for Humans & Nature* Contributors' page: <http://www.humansandnature.org/julianne-lutz-warren> (Last accessed 23 November 2016).

¹⁴ See Julianne Lutz Warren, 'Sound Recording of Huia', *Nelson Institute Centre for Culture, History and Environment, University of Wisconsin-Madison*, n. date: <http://nelson.wisc.edu/che/anthroslam/objects/warren.php> (Last accessed 23 November 2016).

¹⁵ Julianne Warren, 'The Poetry Lab: 'Hopes Echo'', *The Merwin Conservancy*, 2 November 2015: <http://www.merwinconservancy.org/2015/11/the-poetry-lab-hopes-echo-by-author-julianne-warren-center-for-humans-and-nature/> (Last accessed 23 November 2016).

¹⁶ See Adam Vaughan, 'Humans creating sixth great extinction of animal species, say scientists', *The Guardian*, 19 June 2015: <https://www.theguardian.com/environment/2015/jun/19/humans-creating-sixth-great-extinction-of-animal-species-say-scientists> (Last accessed 23 November 2016).

of all amphibian species are at risk of extinction. A fifth of the globe's 5,500 known mammals are classified as endangered, threatened or vulnerable. The current extinction rate for birds may be faster than any recorded across the 150m years of avian evolutionary history. 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 stuplimity: the aesthetic experience in which astonishment is united with boredom, such that we overload on anxiety to the point of outrage-outage.

Art and literature might, at their best, shock us out of the stuplime. Warren's haunted study of the huia finds its own echo in the prose and poetry of Richard Skelton and Autumn Richardson.¹⁷ Their work – sometimes jointly authored – is minutely attentive to the specificities of the gone and the will-be-gone. Place names and plant names assume the status of chants or litanies: spectral taxa incanted as elegy, or as a means to conjure back. In *Succession* (2013),¹⁸ Skelton and Richardson studied palynological records to reconstruct lists of the grasses and flowers that flourished in the western Lake District after the end of the Pleistocene. The area 'is still inhabited by the ghosts of lost flora and fauna', writes Richardson, of which there are 'traces that even now, centuries later, can be uncovered and celebrated'. *Diagrams for the Summoning of Wolves* (2015),¹⁹ a purely musical work, shifts from celebration to intervention: it is intended as a performative utterance – a series of notes, rituals and gestures that might somehow enable 'the return itself'.

Rory Gibb smartly notes that the work of Skelton and Richardson is different in kind from conventional eco-elegy: it evokes 'a more feral feeling of being stalked by ecosystemic memory'.²⁰ Such a feeling is appropriate to the Anthropocene, in which

¹⁷ See the Corbel Stone Press website: <http://www.corbelstonepress.com/wolfhou.htm> (Last accessed 23 November 2016).

¹⁸ See the Aeolian website for further information about this digital album: <http://aeolian.bandcamp.com/album/succession> (Last accessed 23 November 2016).

¹⁹ See the Aeolian website for further information about this digital album: <http://aeolian.bandcamp.com/album/diagrams-for-the-summoning-of-wolves> (Last accessed 23 November 2016).

²⁰ Rory Gibb, 'A Crushing Embrace With The Earth: Ecological Sound In 2015', *The Quietist*, 3 December 2015: <http://thequietist.com/articles/19373-ecology-climate-change-music-art-field-recordings> (Last

we have erased entire biomes and crashed whole ecosystems. Their writing often moves back through the Holocene and into its prior epochs, before sliding forwards to imaginary far futures. They send ghost emissaries – foxes, wolves, pollen grains, stones – back and forth along these deep-time lines. Instead of the intimacies and connections urged by conventional ‘green’ literature, writing like this speaks of a darker ecological impulse, in which salvation and self-knowledge can no longer be found in a mountain peak or stooping falcon, and categories such as the picturesque or even the beautiful congeal into kitsch.



Perhaps the greatest challenge posed to our imagination by the Anthropocene is its inhuman organisation as an event. If the Anthropocene can be said to ‘take place’, it does so across huge scales of space and vast spans of time, from nanometers to planets, and from picoseconds to aeons. It involves millions of different teleconnected agents, from methane molecules to rare earth metals to magnetic fields to smartphones to mosquitoes. Its energies are interactive, its properties emergent and its structures withdrawn.

In 2010 Timothy Morton²¹ adopted the term hyperobject to denote some of the characteristic entities of the Anthropocene. Hyperobjects are ‘so massively distributed in time, space and dimensionality’ that they defy our perception, let alone our comprehension. Among the examples Morton gives of hyperobjects are climate change, mass species extinction and radioactive plutonium. ‘In one sense [hyperobjects] are abstractions’, he notes, ‘in another they are ferociously, catastrophically real’.

Creative non-fiction, and especially reportage, has adapted most quickly to this ‘distributed’ aspect of the Anthropocene. Episodic in assembly and dispersed in geography, some outstanding recent non-fiction has proved able to map intricate

accessed 23 November 2016).

²¹ For further information about Professor Timothy Morton, see his staff page at the Department of English, Rice University: <http://english.rice.edu/morton.aspx> (Last accessed 23 November 2016).

patterns of environmental cause and effect, and in this way draw hyperobjects into at least partial visibility. Elizabeth Kolbert's *The Sixth Extinction: An Unnatural History* (2014) and her *Field Notes from a Catastrophe* (2006)²² are landmarks here, as is Naomi Klein's *This Changes Everything: Capitalism vs the Climate* (2014).²³ In 2015 Gaia Vince published *Adventures in the Anthropocene*,²⁴ perhaps the best book so far to trace the epoch's impacts on the world's poor, and the slow violence that climate change metes out to them.

Last year also saw the publication of *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*, by the American anthropologist Anna Tsing. Tsing takes as her subject one of the 'strangest commodity chains of our times': that of the matsutake, supposedly the most valuable fungus in the world, which grows best in 'human-disturbed forests'. Written in what she calls 'a riot of short chapters, like the flushes of mushrooms that come up after rain', Tsing's book describes a contemporary 'nature' that is hybrid and multiply interbound. Her ecosystems stretch from wood-wide webs of mycelia, through earthworms and pine roots, to logging trucks and hedge funds – as well as down into the flora of our own multispecies guts. Tsing's account of nature thus overcomes what Jacques Rancière has called the 'partition of the sensible', by which he means the traditional division of matter into 'life' and 'not-life'. Like Skelton in his recent *Beyond the Fell Wall* (2015), and the poet Sean Borodale,²⁵ Tsing is interested in a vibrant materialism that acknowledges the agency of stones, ores and atmospheres, as well as humans and other organisms.

²² See Anushka Asthana, 'Feeling the heat: Review of *Field Notes from a Catastrophe* by Elizabeth Kolbert', *The Observer*, 12 August 2007: <https://www.theguardian.com/books/2007/aug/12/scienceandnature.features> (Last accessed 23 November 2016).

²³ See Naomi Klein, 'This Changes Everything: video', *The Guardian*, 6 March 2015: <https://www.theguardian.com/business/video/2015/mar/06/this-changes-everything-naomi-klein-oil-video> (Last accessed 23 November 2016).

²⁴ See Tim Radford, 'Adventures in the Anthropocene by Gaia Vince – review', *The Guardian* 23 September 2015: <https://www.theguardian.com/science/2015/sep/23/adventures-in-the-anthropocene-by-gaia-vance-review> (Last accessed 23 November 2016).

²⁵ See 'A climate change poem for today: Sean Borodale's 'Scratching for Metaphor in the Somerset Coalfields'', *The Guardian*, 18 May 2015: <https://www.theguardian.com/environment/2015/may/18/a-climate-change-poem-for-today-scratching-for-metaphor-in-the-somerset-coalfields-by-sean-borodale> (Last accessed 23 November 2016).



Tom Hardy in *Mad Max: Fury Road*. Photograph: Alamy.

Tsing is also concerned with the possibility of what she calls 'collaborative survival' in the Anthropocene-to-come. As Evans Calder Williams notes, the Anthropocene imagination 'crawls with narratives of survival', in which varying conditions of resource scarcity exist, and varying kinds of salvage are practised. Our contemporary appetite for environmental breakdown is colossal, tending to grotesque: from Cormac McCarthy's *The Road* (2006)²⁶ – now almost an Anthropocene ur-text – through films such as *The Survivalist*²⁷ and the Mad Max franchise, to *The Walking Dead* and the Fallout video game series.²⁸

²⁶ See Alan Warner, 'The road to hell: Review of Cormac McCarthy's *The Road*', *The Guardian*, 4 November 2006: <https://www.theguardian.com/books/2006/nov/04/featuresreviews.guardianreview4> (Last accessed 23 November 2016).

²⁷ See Mark Kermode, 'The Survivalist review – a beautifully bleak end to civilisation', *The Observer*, 14 February 2016: <https://www.theguardian.com/film/2016/feb/14/the-survivalist-mark-kermode-review> (Last accessed 23 November 2016).

²⁸ See Rich Stanton, 'Fallout 4 review – spectacular, messy and familiar', *The Guardian*, 10 November 2015: <https://www.theguardian.com/technology/2015/nov/10/fallout-4-review-spectacular-messy-and-familiar> (Last accessed 23 November 2016).

The worst of this collapse culture is artistically crude and politically crass. The best is vigilant and provocative: Simon Ings' *Wolves* (2014),²⁹ for instance, James Bradley's strange and gripping *Clade* (2015), or Paul Kingsnorth's *The Wake* (2014),³⁰ a post-apocalyptic novel set in the 'blaec', 'brok' landscape of 11th-century England, that warns us not to defer our present crisis. I think also of Clare Vaye Watkins's glittering *Gold Fame Citrus* (2015),³¹ which occurs in a drought-scorched American southwest and includes a field-guide to the neo-fauna of this dunescape: the 'ourob-oros rattlesnake', the 'Mojave ghost crab'.

Such scarcity narratives unsettle what we might call the Holocene delusion on which growth economics is founded: of the Earth as an infinite body of matter, there for the incredible ultra-machine of capitalism to process, exploit and discard without heed of limit. Meanwhile, however, speculative novelists – Andy Weir in *The Martian*,³² Kim Stanley Robinson in *Red Mars*³³ – foresee how we will overcome terrestrial shortages by turning to asteroid mining or the terra-forming of Mars. To misquote Fredric Jameson, it is easier to imagine the extraction of off-planet resources than it is to imagine the end of capitalism.

The novel is the cultural form to which the Anthropocene arguably presents most difficulties, and most opportunities. Historically, the novel has been celebrated for its ability to represent human interiority: the skull-to-skull skip of free indirect style, or the vivid flow of stream-of-consciousness. But what use are such skills when

²⁹ See Toby Litt, 'Wolves by Simon Ings – review', *The Guardian*, 24 January 2014: <https://www.theguardian.com/books/2014/jan/24/wolves-simon-ings-review> (Last accessed 23 November 2016).

³⁰ See Adam Thorpe, 'The Wake by Paul Kingsnorth – review', *The Guardian*, 2 April 2014: <https://www.theguardian.com/books/2014/apr/02/the-wake-paul-kingsnorth-review-literary-triumph> (Last accessed 23 November 2016).

³¹ See Justine Jordan, 'Gold Fame Citrus by Claire Vaye Watkins review – a wild trip in the American west', *The Guardian*, 10 February 2016: <https://www.theguardian.com/books/2016/feb/10/gold-fame-citrus-by-claire-vaye-watkins-review> (Last accessed 23 November 2016).

³² See Eric Brown, 'Science fiction roundup – reviews', *The Guardian*, 10 April 2014: <https://www.theguardian.com/books/2014/apr/10/science-fiction-roundup-review> (Last accessed 23 November 2016).

³³ See James Smythe, 'Why Kim Stanley Robinson's *Mars* books will be perfect for television', *The Guardian*, 9 December 2015: <https://www.theguardian.com/books/booksblog/2015/dec/09/why-kim-stanley-robinsons-mars-books-will-be-perfect-for-television> (Last accessed 23 November 2016).

addressing the enormity of this new epoch? Any Anthropocene-aware novel finds itself haunted by impersonal structures, and intimidated by the limits of individual agency. China Miéville's 2011 short story 'Covehithe'³⁴ cleverly probes and parodies these anxieties. In a near-future Suffolk, animate oil rigs haul themselves out of the sea, before drilling down into the coastal strata to lay dozens of rig eggs. These techno-zombies prove impervious to military interventions: at last, all that humans can do is become spectators, snapping photos of the rigs and watching live feeds from remote cameras as they give birth – an Anthropocene *Springwatch*.



'It's easier to imagine the extraction of off-planet resources than it is to imagine the end of capitalism' . . . Matt Damon in *The Martian*. Photograph: Moviestore/REX Shutterstock.

Most memorable to me is Jeff VanderMeer's 2014 novel, *Annihilation*.³⁵ It describes an expedition into an apparently poisoned region known as Area X, in which relic human structures have been not just reclaimed but wilfully redesigned

³⁴ China Miéville, 'Covehithe', *The Guardian*, 22 April 2011: <https://www.theguardian.com/books/2011/apr/22/china-mieville-covehithe-short-story> (Last accessed 23 November 2016).

³⁵ Simon Ings, 'You'll find yourself afraid to turn the page: Review of *Annihilation* by Jeff VanderMeer', *The Guardian*, 5 March 2014: <https://www.theguardian.com/books/2014/mar/05/annihilation-review-jeff-vandermeer-afraid-turn-page> (Last accessed 23 November 2016).

by a mutated nature. A specialist team is sent to survey the zone. They discover archive caches and topographically anomalous buildings including a 'Tower' that descends into the earth rather than jutting from it. The Tower's steps are covered in golden slime, and on its walls crawls a 'rich greenlike moss' that inscribes letters and words on the masonry – before entering and authoring the bodies of the explorers themselves. It gradually becomes apparent that Area X, in all its weird wildness, is actively transforming the members of the expedition who have been sent to subdue it with science. As such, VanderMeer's novel brilliantly reverses the hubris of the Anthropocene: instead of us leaving the world post-natural, it suggests, the world will leave us post-human.



As the idea of the Anthropocene has surged in power, so its critics have grown in number and strength. Cultural and literary studies currently abound with Anthropocene titles: most from the left, and often bitingly critical of their subject. The last 12 months have seen the publication of Jedediah Purdy's *After Nature: A Politics for the Anthropocene*, McKenzie Wark's provocative *Molecular Red: Theory for the Anthropocene* and the environmental historian Jason W Moore's important *Capitalism in the Web of Life*. Last July the 'revolutionary arts and letters quarterly' *Salvage*³⁶ launched with an issue that included Daniel Hartley's essay 'Against the Anthropocene' and Miéville, superbly, on despair and environmental justice in the new epoch.

Across these texts and others, three main objections recur: that the idea of the Anthropocene is arrogant, universalist and capitalist-technocratic. Arrogant, because the designation of the Anthropocene – the 'New Age of Humans' – is our crowning act of self-mythologisation (we are the super-species, we the Prometheans, we have ended nature), and as such only embeds the narcissist delusions that have produced the current crisis.

Universalist, because the Anthropocene assumes a generalised *anthropos*, whereby all humans are equally implicated and all equally affected. As Purdy, Miéville and Moore point out, 'we' are not all in the Anthropocene together – the poor and

³⁶ See the *Salvage* website: <http://salvage.zone/past-issues/> (Last accessed 23 November 2016).

the dispossessed are far more in it than others. 'Wealthy countries', writes Purdy, 'create a global landscape of inequality in which the wealthy find their advantages multiplied . . . In this neoliberal Anthropocene, free contract within a global market launders inequality through voluntariness'.

And capitalist-technocratic, because the dominant narrative of the Anthropocene has technology as its driver: recent Earth history reduced to a succession of inventions (fire, the combustion engine, the synthesis of plastic, nuclear weaponry). The monolithic concept bulk of this scientific Anthropocene can crush the subtleties out of both past and future, disregarding the roles of ideology, empire and political economy. Such a technocratic narrative will also tend to encourage technocratic solutions: geoengineering as a quick-fix for climate change, say, or the Anthropocene imagined as a pragmatic problem to be managed, such that 'Anthropocene science' is translated smoothly into 'Anthropocene policy' within existing structures of governance. Moore argues that the Anthropocene is not the geology of a species at all, but rather the geology of a system, capitalism – and as such should be rechristened the Capitalocene.

There are signs that we will soon be exhausted by the Anthropocene: glutted by its ubiquity as a cultural shorthand, fatigued by its imprecisions, and enervated by its variant names – the 'Anthrobscene', the 'Misanthropocene', the 'Lichenocene' (actually, that last one is mine). Perhaps the Anthropocene has already become an anthropomeme: punned and pimped into stuplimity, its presence in popular discourse often just a virtue signal that merely mandates the user to proceed with the work of consumption.

I think, though, that the Anthropocene has administered – and will administer – a massive jolt to the imagination. Philosophically, it is a concept that does huge work both for us and on us. In its unsettling of the entrenched binaries of modernity (nature and culture; object and subject), and its provocative alienation of familiar anthropocentric scales and times, it opens up rather than foreclosing progressive thought. What Christophe Bonneuil calls the 'shock of the Anthropocene' is generating new political arguments, new modes of behaviour, new narratives, new languages and new creative forms. It asserts – as Jeremy Davies writes at the end of his excellent forthcoming book, *The Birth of the Anthropocene* – a 'pressing need to re-imagine human and nonhuman life outside the confines of the Holocene', while also asking 'how best to keep faith with the web of relationships, dependencies, and

symbioses that made up the planetary system of the dying epoch'. Systemic in its structure, the Anthropocene charges us with systemic change.



In 1981 the research field of 'nuclear semiotics' was born. A group of interdisciplinary experts was tasked with preventing future humans from intruding on to a subterranean storage facility for radioactive waste, then under construction in the New Mexico desert. The half-life of plutonium-239 is around 24,100 years; the written history of humanity is around 5,000 years old. The challenge facing the group was how to devise a sign system that could semantically survive even catastrophic phases of planetary future, and that could communicate with an unknown humanoid-to-be.



Construction of the Waste Isolation Pilot Plant in New Mexico, an underground nuclear waste dump. Photograph: Eric Draper / AP.

Several proposals involved forms of hostile architecture: a 'landscape of thorns' in which 15m-high concrete pillars with jutting side spikes impeded access; a maze of sharp black rock blocks that absorbed solar energy to become impassably hot. But such aggressive structures can act as enticements rather than cautions, suggesting here be treasure rather than here be dragons. Prince Charming hacked his way

through the briars to wake Sleeping Beauty. Indiana Jones braved wooden spikes and rolling boulders to reach the golden idol in a booby-trapped Peruvian temple. Sometimes I wonder if the design task should be handed wholesale to the team behind the Ikea instruction manuals: if they can convey in pictograms how to put up a Billy bookcase anywhere in the world, they can surely tell someone in 10,000 years' time not to dig in a certain place.

The New Mexico facility is due to be sealed in 2038. The present plans for marking the site involve a berm with a core of salt, enclosing the above-ground footprint of the repository. Buried in the berm will be radar reflectors, magnets and a 'Storage Room', constructed around a stone slab too big to be removed via the chamber entrance. Data will be inscribed on to the slab including maps, time lines, and scientific details of the waste and its risks, written in all current official UN languages, and in Navajo: 'This site was known as the WIPP (Waste Isolation Pilot Plant Site) when it was closed in 2038 AD . . . Do not expose this room unless the information centre messages are lost. Leave the room buried for future generations'. Discs made of ceramic, clay, glass and metal, also engraved with warnings, will be embedded in the soil and the shaft seals. Finally, a 'hot cell', or radiation containment chamber, will be constructed: a reinforced concrete structure extending 60 feet above the earth and 30 feet down into it: VanderMeer's 'Tower' made real.

I think of that configuration of berm, chamber, shaft, disc and hot cell – all set atop the casks of pulsing radioactive molecules entombed deep in the Permian strata – as perhaps our purest Anthropocene architecture. And I think of those multiply repeated incantations – pitched somewhere between confession, caution and black mass; leave the room buried for future generations, leave the room buried for future generations . . . – as perhaps our most perfected Anthropocene text.

· This article was amended on 6 April 2016 to correct the name of Henare Hamana.

1. Broadly speaking, what was your initial reaction to Robert Macfarlane's article? What aspects are you drawn to and what strikes you about his use of the term 'Anthropocene'?

Daniel King: For something published in a mainstream newspaper, this is perilously close to academic writing, albeit of a kind that aims at accessibility even as it draws on sources as diverse as Fredric Jameson, contemporary cultural and scientific theorists, and working groups. Could it be considered a model for accessible academic writing?

I was also fascinated by the central conceit of the piece, that we need to understand human time as one – finite – moment in ongoing geological time through trying to understand what kind of trace we might leave in the fossil record. As a Cormac McCarthy specialist, the phrase 'our legacy legible for millennia to come' struck a particular chord with me, evoking as it does Judge Holden's 'Sermon on the Rocks' from *Blood Meridian* (1985) – a perverse kind of literacy if ever there was one – and the recurring motif in McCarthy's work of the importance set by his characters' ability to 'read the world' by 'cutting for sign' (McCarthy, 2007: 15), a skill upon which their survival often depends (Gwinner, 2011: 139).

Diletta De Cristofaro: I had a similar reaction to Daniel King, as I thought that Macfarlane's article was an excellent example of academic writing for a public audience: accessible, informative, and engaging.

The relationship between the Anthropocene and time also stood out for me. Since I am a scholar of post-apocalyptic fiction and also particularly interested in the imbrication of narratives and time, I was drawn to Macfarlane's sketch of the temporal and political questions that the Anthropocene asks of us, as well as to the representational issues that the epoch poses to the novel-form. Specifically, how can a novel conceptualise, and plot, the Anthropocene's networks of global responsibilities and connections distributed over centuries, and even millennia? This led me to think about the temporal and structural experimentations of contemporary fiction – David Mitchell's novels, because of their apocalyptic themes, immediately come to

mind, as well as John Updike's *Toward the End of Time* (1997), Michel Houellebecq's *The Possibility of an Island* (2005), Will Self's *The Book of Dave* (2006) and Jeanette Winterson's *The Stone Gods* (2007) – and how these experimentations might be a way of posing these temporal and political questions, whilst addressing the formal challenges of the Anthropocene.

Joanne Scott: When I started to read Macfarlane's article, I experienced a series of quite satisfying chimes and resonances. This happens to me when someone writes about an experience I have had, in a way which succinctly reveals and articulates what that experience feels like – I'm thinking about the 'ambient hum of guilt' in particular. However, by the time I got to the notion of 'stuplimity', I had become a little unsatisfied with the language, a little more circumspect about the cleverness of the words and a feeling arose then that there is something about the Anthropocene that is, and should be, beyond language.

As a performance-maker and researcher of performance, it is probably not surprising that I invest in modes of expression that might be beyond the reach of or outside the range of the written word. In the act of performance, the quality and rhythm of the movement of the body, its occupation of space, as well as, for example, combinations of light, sound and image on stage can communicate as powerfully as the words spoken by a performer. This is particularly true in much contemporary or 'postdramatic' performance, where, as Hans-Thies Lehmann describes, 'text. . . is considered only as one element, one layer, or as a 'material' of the scenic creation, not as its master' (Lehmann, 2006: 17). The work of practitioners such as Societas Raffaello Sanzio, Robert Wilson and Heiner Goebbels (see below) offer good examples of this. As such, though like Dan and Diletta, I admire Macfarlane's ability to deal with a range of complex concepts in an engaging and accessible way, something about the easy application of the language to the topic unnerves me. I think I should have struggled a little more with the idea of the Anthropocene and the article made me feel like I didn't need to.

Neelam Srivastava: I found his article quite visionary in its outlining of concepts relating to climate change and the Anthropocene, as they influence contemporary fiction and cultural debates. It seemed to me an exploratory article rather than a piece that was making a strong position statement, as it presented us with different views and ideas on the fashionable notion of the Anthropocene in critical theory today.³⁷

I would probably feel even more pessimistic and apocalyptic about the impact of climate change on our earth and our society than Macfarlane outlines, given the speed at which enormous and far-reaching environmental changes are occurring (the *New Yorker* has recently published a piece entitled 'Living in a World Without Ice', something that is likely to occur within our lifetime) and the inability of governments to agree on a common planetary environmental policy, which will surely have disastrous consequences for human survival. Macfarlane rightly points out that an awareness of the titanic geological shifts we have created has mainly led to fiction that narrates the post-apocalyptic and indeed post-human experience. Perhaps what's missing from this fascinating piece, though, is a sense of the *impotence* of humans when confronted with what we have triggered: climate change is no longer reversible, and therefore we are really at the end of hope.

Andrew Rowcroft: Working in the Marxist tradition, I would situate the article, and the questions it poses regarding now irreversible planetary ecological shifts, as a form of praxis or action, an intervention within a concrete or real situation. While Neelam has already diagnosed what is missing from the text – and, ultimately, I share something of her pessimism – such developments still call for the importance of a more critical utopianism, and movements that challenge the destructive logic of capital. Tom Moylan, for instance, discusses texts and images that are not necessarily blueprints but 'beginnings, at the level of the imagination, of actual solutions to current problems' (Moylan, 1986: 3). Going beyond the written word, as Joanne has stated, is essential here.

³⁷ See for example Chakrabarty (2012), Baucom (2014) and Wark (2015).

I likewise considered the article analytically useful and well written, often giving tantalising glimpses of how the ideas can be applied or pursued elsewhere. Yet, so far, the roundtable has ignored Macfarlane's use of images, which I found compelling, even if they weren't selected by the author: rainforests on fire, plastic in the ocean, colossal rubbish heaps. This is then supplemented with stills from recent blockbuster films including *Mad Max* (2015) and *The Martian* (2015), reminding us that despite the immensity of these planetary developments, cultural texts provide a vital angle on this debate. Moving beyond the more sensationalist aspects of these commercial ventures is necessary, however, but this project begins with a critical scrutiny of both image and text.

Daniel Cordle: I find the article exhilarating for finding a language to crystallise the contemporary moment (very broadly understood – perhaps to include the whole of human history) and ask questions of it. In particular, it helps us understand our place within (not as separate from) the ecosystems that constitute the world and to reflect on the social, cultural and economic consequences of that place. Like everyone else, I find the bridging of academic and journalistic modes useful. Macfarlane is one of our great writers on nature and culture: *Mountains of the Mind: A History of a Fascination* (2003) elegantly mixes personal experience and readings of literature and history to show how mountains were invented, as much as they were discovered, by the Romantic imagination; *The Wild Places* (2007) asks us to reassess our sense of wilderness within the contemporary British Isles; and *Landmarks* (2015) explores the relationship between language and place. His informed, essayistic style, moving between personal experience and historically informed literary and cultural criticism, is valuable not only for popularising academic thought, but because it helps us (as academics) to think about the world differently.

I also welcome the call to find a vocabulary for the contemporary moment, but I dread a proliferation of neologisms as people build careers by staking out ground in the Anthropocene. I disagree that the novel is the form most challenged by the Anthropocene, for the struggle for a language to render human experience

in the broad and deep planetary contexts demanded by the Anthropocene is surely as profound in other forms, like poetry and drama. In each case, the challenge remains the same: how does the definitively human perspective provided by human language speak beyond the human to the universe before and after our existence? For example, when in his poem, 'Song of Myself', Walt Whitman writes, 'I find I incorporate gneiss [metamorphic rock] and coal and long-threaded moss and fruits and grains and esculent roots./And am stucco'd with quadrupeds and birds all over' (Whitman, 1990 [1855]: 57), he imagines deep time and he imagines himself as the Earth, but the recurrence of the first person pronoun means the poem's conception of the Earth remains rooted (as it must) in the contemporary human perspective.

Hence, although my main critical interest is in the novel, I am intrigued by the means by which other literary and cultural forms might rise to the challenge of the Anthropocene. For this reason, I like Joanne's suggestion of the ways in which performance might engage with it. It may even be that focusing on the idea of the Anthropocene as a 'challenge' overstates our failures and leads us to ignore the glimpses of the Anthropocene that our literature gives us. If we think of the Anthropocene as a product of reading rather than simply of writing, we open up the storehouses of literary history: the Anthropocene is not only a contemporary concern. For instance, though they predate the coining of the term 'Anthropocene', both Leslie Marmon Silko's novel, *Ceremony* (1979), which juxtaposes Native American and 'Western' conceptions of time, and Gary Snyder's poems about our perspectives on nature ('Control Burn', 'Mother Earth: Her Whales' and 'Why Log Drivers Rise Earlier Than Students of Zen', from his 1974 collection, *Turtle Island*, are all good examples), productively engage notions of deep time and of human relations with the Earth.

2. What potential do you see in the Anthropocene as a new strand of criticism? What, for example, distinguishes it from previous strands of ecocriticism?

King: I think the idea of setting the Anthropocene period back to the dawn of large-scale agriculture is one of the more productive lines of enquiry here, and I feel that this is an ambition matched by current trends in literature. Alongside the examples Macfarlane offers, I think of William Vollmann's *Seven Dreams* series (1990–2015) or Ray Fawkes' *One Soul* (2011) as literature that seeks out the beginnings of what we now, or will soon I suppose, think of as the Anthropocene.

What differentiates this project from others that I have seen is the introduction of a new critical vocabulary, though I did find myself wondering about the utility of these terms which run the risk of coming off as somewhat gimmicky. However, these attempts to recast language – Macfarlane's link to the 'Bureau of Linguistic Reality' is a key example here – show a striking and admirable ambition to deliver a 'jolt' to the human imagination.

De Cristofaro: The main difference with ecocriticism is that the Anthropocene is not a critical framework *per se*, as the term denotes a new era of geological time.³⁸ When used as a tool for criticism, however, I believe that the potential of the concept lies in the representational issues it raises – issues that may be also addressed through the new vocabulary which, Daniel notes, is at the core of Macfarlane's piece. I, too, am wary of this new vocabulary coming off as gimmicky, and indeed so is Macfarlane, who signals the risk of the Anthropocene becoming an 'anthropomeme'. As mentioned above, I am instead more interested in the way in which contemporary fiction experiments with form to respond to what Macfarlane identifies as the 'enormity of this new epoch'. As critics, I believe we need to theorise these formal developments as new narrative models, which reflect the Anthropocene's networks of connections, diffused temporally and spatially.

³⁸ The term Anthropocene suggests: (i) that the Earth is now moving out of its current geological epoch, called the Holocene and (ii) that human activity is largely responsible for this exit from the Holocene, that is, that humankind has become a global geological force in its own right' (Steffen, Grinevald, Crutzen & McNeill, 2011: 843). The Anthropocene Working Group, part of the International Commission on Stratigraphy, has recently voted to recommend the formalisation of the term as a new geological epoch (Carrington, 2016).

Scott: I agree with Diletta that I would not necessarily view the Anthropocene as a strand of criticism, though clearly, as Macfarlane demonstrates, it can be used as a critical tool – in grouping, characterising and analysing a set of related artistic responses. It also seems to differ slightly in tone from the broader field of ecocriticism, in that, as the article suggests, the Anthropocene is specifically characterised by a set of expansive concepts related to our positioning in the world now, which are deliberately difficult to conceive of and represent – ‘deep time’ for instance. It also finds its most interesting focus, I think, in ways of describing how it feels to be alive now – Glenn Albrecht’s (2012) notion of ‘solastalgia’ is a good example of this.

I also think the Anthropocene could offer something in terms of prompting a shift in practice or re-positioning of habitual frames of reference. Carl Lavery and Clare Finburgh state that the Anthropocene, ‘in addition to its geological meaning’, also ‘describes the coming into being of a new ambivalent and troubling mode of knowledge’ (Lavery and Finburgh, 2015: 34). They advocate adopting deliberately anti-humanist aesthetics, strategies and readings of theatre, ‘the anthropocentric art-form *par excellence*’ (Lavery and Finburgh, 2015: 4). In many ways, this approach reverses the focus of much theatre and performance making and study, which has often directed its attention to the human, whether that is the body of the actor or the means through which that body and its staging can represent and communicate another human’s experience. An anti-humanist approach prompts us to pay attention to the non-human in the act of performance, as well as modes of performance that explore the world’s agency and energy outwith and beyond our human perception of it. This seems to me to be a really productive way of responding to the Anthropocene. Its ‘enormity’, as Diletta points out, its evocation of ‘deep time’ and a different temporality, as well as the culpability-vulnerability dualism Macfarlane suggests, create a constellation of quite powerful ideas, which have the capacity to prompt us to think about and make creative work in new and refreshed ways.

Cordle: I like that idea of the Anthropocene as a ‘critical tool’. There are two areas in which I’d like to put it to use.

Firstly, as someone whose research focuses on nuclear culture, it gives me a way of thinking beyond the immediate nuclear emergencies of the Cold War to the longer term resonances of nuclear materials and cultures through deep time. I've been thinking recently how nuclear culture articulates a 'politics of vulnerability', and I believe that also resonates with the Anthropocene. Robert Macfarlane calls McCarthy's *The Road* (2006), a novel that I cannot help but think of in terms of its nuclear imagery and dimensions, 'almost an Anthropocene ur-text' (Macfarlane, 2016). I'd like to put Michael Madsen's 2010 documentary about nuclear waste architecture and culture, *Into Eternity*, alongside McCarthy's novel. More conventional nuclear texts – Walter M. Miller, Jr.'s *A Canticle for Leibowitz* (1960), Doris Lessing's *Memoirs of a Survivor* (1974), Vonda McIntyre's *Dreamsnake* (1978), and a host of others – can be read productively through the idea of the Anthropocene. Surely, too, earlier post-apocalyptic fiction like M.P. Shiel's *The Purple Cloud* (1901) might also be productively appropriated for readings of the Anthropocene.

Second, it takes me back to an earlier interest: the 'two cultures' debate and relations between the Sciences and the Humanities.³⁹ The Anthropocene provides an opportunity to work with the Sciences. After all, the Earth Sciences, particularly Geology, are at the heart of the project to define the Anthropocene and are central to our broader understanding of deep time. The Anthropocene is a product of the material impact of human culture and society upon the planet and a comprehensive understanding of that requires expertise from multiple disciplines. We need to understand both the material effects of human culture (on the landscapes we inhabit; on the species with which we share the Earth; on the climate) and the human causes of those material effects. Sometimes, literature-science studies can speak rather imperialistically for and about science without inviting dialogue (without, for instance,

³⁹ The term, the 'two cultures', as it is used here, originates with the scientist and novelist C.P. Snow's 1959 Rede Lecture (Snow, 1961), in which he argued that a gulf had arisen between scientific and literary intellectuals. He argued that the Sciences are central to society but undervalued and deeply misunderstood by those outside the Sciences. The literary critic, F.R. Leavis, disputed this view, arguing that the work of the Humanities, particularly an English School, are at the heart of the modern university (Leavis in Yudkin, 1962).

engaging with how scientists respond to the models of science we posit when we talk about science's place in the culture, or without considering how contemporary sciences, like those of the mind, might challenge or develop the models of mind with which we operate), but there might be useful things to learn from the Sciences here and projects on which productively to collaborate.⁴⁰

3. Drawing from Macfarlane's article, how much is the Anthropocene conceived as a global concept? Can you speculate or comment on its potential reach or relevance outside the West and the Global North?

King: It strikes me that for there to be a true Anthropocene, it does have to be a global phenomenon – that is how geological time has to work. It is also true that a lot of what Macfarlane writes about here – deforestation, mining, global capitalism, the environmental catastrophe of plastics – has a global reach. However, the new language surrounding the Anthropocene and the efforts to defamiliarise existing concepts I mentioned above are really only accessible to those with easy access to the aforementioned Bureau's websites, and to people who read English. Alternative modes of 'getting the word out' need to be found if the Anthropocene is to have a truly global reach, but the potential of these ideas as loan words – comparable to perhaps the early 2000s rise of 'sonder' – can very well be a highly effective way to bridge linguistic gaps.⁴¹ We also live in an age where ideas of environmentalism and

⁴⁰ Literature-science studies is a broad field, exploring the representation of science and scientists in literature, as well as more subtle relations between the Humanities and the Sciences. The scholarly organisations, The Society for Literature, Science and the Arts (SLSA), based in the USA, and the British Society for Literature and Science (BSLS), are key in promoting work in this field. Gillian Beer's work (1983) predated both the SLSA and the BSLS and is a good early example of literature-science criticism. In the 1990s controversy about a broader humanities-focused science studies, dubbed the 'science wars', erupted when some scientists objected to what they saw as an appropriation and misunderstanding of science by humanities scholars. For instance, in a controversial book, *Intellectual Impostures: Postmodern Philosophers' Abuse of Science* (1998; first published in French in 1997), Alan Sokal and Jean Bricmont argue that humanities scholars frequently misunderstand science and misrepresent its truth claims as culturally arbitrary.

⁴¹ Used as a noun, 'sonder' is the realisation that each random passer-by is living a life as vivid and complex as your own. Though its origin is obscure, it seems to have originated from a popular –

sustainability are beginning to gain a global reach – for example, Bhutan's trumpeting of its achievement in being the world's first 'Carbon negative' country.⁴² The ideas are getting out, so perhaps the language will follow.

De Cristofaro: As Daniel King remarks, as a new epoch of geological time the Anthropocene cannot but be conceived as a global concept. Yet, as Macfarlane underlines, one of the criticisms that we can level at the concept is that it presupposes a universal human nature that ignores inequalities and historically rooted dynamics of oppressions. The 'anthropos' implied by the term Anthropocene is often that of the Global North. Carbon emissions trading, which is supposed to relieve climate change, has been accused of 'carbon colonialism' (Bachram, 2004), and the Anthropocene affects the Global North and South differently precisely because of those historically-rooted dynamics of oppressions. Thus, a fruitful use of the term would acknowledge the differences between the North and the South, because, as China Miéville puts it, 'we fight best by embracing our not-togetherness' (Miéville, 2015).

Leading on from King's discussion of language, I am intrigued by Jason W. Moore's suggestion that 'Capitalocene' (Moore, 2016) would be, as a term, more useful than 'Anthropocene', as it would presuppose and foreground the differences within capitalism. As ever, though, the problem is who has access to, and interest in, these concepts and debates – is it just academia, and in particular the Humanities and Social Sciences? Especially given that a scientific commission is deliberating on the term 'Anthropocene', not 'Capitalocene'?

Scott: I agree with Daniel and Diletta about issues of accessibility to these debates and with the universality that the 'anthropos' implies, which is problematic. Though

and mostly fictional – online word blog, 'The Dictionary of Obscure Sorrows' in 2014 and has since made its way into semi-common usage, including art reviews for *The Guardian* and assorted 'word list' articles in *The Independent*.

⁴² Arthur Nelson, 'Bhutan has "most ambitious pledge" at the Paris climate summit', *The Guardian*, 3 December 2015. Available at: <https://www.theguardian.com/environment/2015/dec/03/bhutan-has-most-ambitious-pledge-at-paris-climate-summit> (Last accessed 16 January 2016)."

the term itself by its geological nature is global, the ideas and discourses that surround it feel like they sit very much in the domain of the academic. Having said that, there are ideas within the article, that Macfarlane connects to the Anthropocene, which feel very resonant and real and relatable. As referenced above, Albrecht's notion of 'solastalgia' (Albrecht, 2012), for instance, is one that I recognise and feels like it probably has relevance to people living in a range of contexts, urban and rural, in the Global North and South. The causes for the changes in landscape and the divisions and oppressions they indicate can and should be rigorously debated. The homesickness you feel for the landscape, which has changed around you and beyond your recognition, is something that could be shared. This felt sense of the Anthropocene could also be a productive point of departure for discussing how we address our varying and unequal levels of culpability for and vulnerability to these transformations.

Srivastava: Dipesh Chakrabarty has recently taken on the notion of the Anthropocene in his contribution to a multi-authored debate on 'The State of Postcolonial Studies' in *New Literary History*. He finds the Anthropocene to be an influential notion for changing the way we are thinking about social justice and political radicalism in the context of postcolonial studies, because it radically questions the power of the human subject to affect transformation (Chakrabarty, 2012: 1). I would tend to agree – for me the most significant thing about taking stock of the (irreversible) impact of humans on the Earth's environment is that it does away with teleology completely and introduces the notion of extinction, rather than hope or utopian ideals as the end-point of our imagining of the future. Calling the present era 'the Anthropocene' raises the interesting question of how we can reformulate a progressive ethics and politics for our present time, given the irreversible disappearance of natural resources. How do we combat capitalism when we ourselves are doomed to extinction?

Rowcroft: For me, the Anthropocene could benefit enormously by being tied to Marxism. Leerom Medovoi has recently argued that eco-critical approaches,

'perhaps the youngest of contemporary literary hermeneutics', 'can and should be dialectically assimilated to the project of a Marxist literary and cultural criticism' (Medovoi, 2009: 122). Arguing that ecocriticism requires a much more precise historical and material specificity, Medovoi argues that bringing ecocritical approaches within the fold of Marxist dialectics would allow ecocriticism to move beyond its characteristic weakness: 'its utter incapacity to theorize itself as anything other than a *thematic* criticism that passes ethical judgment on the depictions of either nature or built environments' (Medovoi, 2009: 133).

My point here is that Marxism, unlike other theories, argues the unity of theory and praxis – distinct, as Fredric Jameson notes, from 'the implied autonomy of the philosophical concept' (Jameson, 2009: 11) – and proposes the completion of objectives outside of philosophy. A minimal first step towards solving these problems here would be achieving a truly social democratic movement and the legitimation of a Marxist intellectual presence in public discourse. I think the Anthropocene could be a powerful aid to that, and also effective in fostering a more co-operative approach to the use of the world's resources.

Cordle: As Daniel and Diletta say, by definition this is a planetary concept, though like Daniel I'm not confident I can step outside my perspective, rooted in the West and Global North, to speak of its relevance for others. If it's useful for them, they'll find ways to make it speak.

Neelam and Andrew provide good examples of how their own theoretical perspectives might shape understanding of aspects of the Anthropocene and how these could forge communities of understanding, but I'd be wary of attempts to appropriate it within a single theoretical perspective. It's a tool that can be put to work usefully in different critical perspectives, for specific ends (and vice versa: those perspectives help us access different facets of the Anthropocene), but we have to leave room to be challenged. This is an exciting, new concept and we have to have the courage to allow it to unsettle not only our sense of ourselves (in the West; in the Global North), but also the theoretical lenses through which we view the world.

4. Macfarlane frames his discussion as a call to arms – what would you say is the political potential of essays like this and/or the Anthropocene texts he demands?

De Cristofaro: There is a certain paradoxical element to the notion of the Anthropocene. On the one hand, this era is inherently about human agency powerfully affecting the planet. On the other, as Neelam underlines, the Anthropocene also raises the issue of human impotence in the face of the irreversibly nefarious human impact on the Earth. As Clive Hamilton, Christophe Bonneuil, and François Gemenne put it, the Anthropocene is the ‘age in which the irreversible must somehow be governed’ (Hamilton et al., 2015: 11). If pieces like Macfarlane’s are to have political resonance, they need to confront this paradox. Issues of accessibility are also key. As repeatedly emphasised in previous answers, the style of Macfarlane’s piece is helpful in popularising the term and reaching a wider public than traditional academic analyses. Cultural products, by giving narrative form to theoretical insights on the Anthropocene, may also be effective in raising awareness and stimulating a broader debate, as well as political action itself.

King: Macfarlane’s article is engaging, informative, and clearly aimed at some kind of political galvanising in his readers. It is this overtly political aim that makes it all the more significant, and it is notable that *The Guardian* allowed him so much room for his engaging, but complex, article. This is clearly a political kind of scholarship, aimed at a productive kind of ‘Impact’.⁴³ With this kind of engaged scholarship and the very compelling argument that Macfarlane offers his readers comes a tremendous potential to influence people’s thinking on these issues and get the term into circulation beyond the academy, since newspaper publication gives his work a wider reach than much scholarship can honestly claim. This returns us, however, to the

⁴³ The precise nature of academic impact is a matter of debate among scholars but the definition from the HEFCE site itself reads: ‘The Research Excellence Framework [2014] was the first exercise to assess the impact of research outside of academia. Impact was defined as ‘an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia’ (<http://www.hefce.ac.uk/rsrch/REFimpact/>).

issues raised by several responders about Macfarlane's deployment of neologisms and a certain kind of jargon. These terms, useful and interesting as they may be to traditionally academic audiences, may prove to be a stumbling block towards more widespread acceptance of the ideas of the Anthropocene.

Cordle: The key word is 'potential'. Macfarlane's essay doesn't formulate a coherent political position, but that's neither its purpose nor its value. What it does do is make visible and communicate a concept that helps us reconceptualise and think through the contemporary epoch. The political efficacy of the Anthropocene lies then in how we use this critical tool – say, to read the significance of the texts he cites, or of others that we consider to be Anthropocene texts.

I don't think the politics is straightforward, and if we simply appropriate the Anthropocene for our pre-established political positions without accepting that it might challenge or change them, then we're likely to miss some opportunities. As Diletta suggests, the issue of human agency is a complex one. Certainly, there's not much point in 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. Ultimately, it has to be a global politics too, albeit one that works through the complex resonances between local and global perspectives and actions.

Rowcroft: I agree with the previous comments but would posit a further distinction between the ethical and the political to explore these debates more fully. Žižek's reading of Lenin is helpful here. For Žižek, the ethical is a duty of care to that which remains – perhaps even a sense of resignation to the inevitable or that which is ultimately out of our hands. In turn, the political recognises the importance of practical decisions and accepts the consequences of action (Žižek qtd in Callinicos, 2007: 21). These are of course not static definitions, and Macfarlane's article doesn't fit into either neatly. What is important, however, is that we begin with 'a massive jolt to the imagination', one that will build upon the process of its own formation as the concept takes up wider public appeal.

Scott: I am interested in the distinction between the ethical and political, referenced by Andrew above, in relation to the state of play Macfarlane outlines. Clearly, the writing prompts both a sense of responsibility and the possibility of an active response to the 'shock' of the Anthropocene. It is true, as Daniel Cordle says, that Macfarlane does not set out a political position as such. Rather, he presents the reader with a set of neat formulations for what the Anthropocene is and how it might usefully 'unsettle' thinking about our place in the world, acknowledging, as Diletta points out, the complexity of this in relation to human agency. It seems to me that it is this fresh and 'unsettling' way of understanding where we are that Macfarlane offers, rather than a call to arms, as such. If it is indeed a call to arms, it does not really give a sense of how we should arm ourselves or whom we would be fighting, if not ourselves. What we make of it then, whether that is art or action or both, is, I suppose, up to us.

Srivastava: As said above by others, I think the political potential of Macfarlane's article lies in drawing on the resources of literature to supplement climate change narratives with direct appeals to emotion and aesthetics. A novel like Amitav Ghosh's *The Hungry Tide* (2004), set in the labyrinthine region of the Sundarbans in the Bay of Bengal, brings to life a relatively unknown ecosystem, threatened by global warming and wildlife extinction, simultaneously showing how environmental violence is a politically motivated act against communities and populations that deserves to be represented in fiction. Macfarlane's is not an *expert's* take on climate change – it is a call to arms to take charge of our own destiny again as humans. We have created the very real potential for self-destruction, and it is up to us to try and reverse it. But this needs to be an ethical and political message – albeit one grounded in scientific facts – and perhaps the best way to do this would be to mobilise the role of literature in such an 'environmental revolution'.

I do think that the most interesting by-product of this discussion on climate change has been the reflection on, and change in, creative forms – I'm thinking especially of cinema (the vivid evocation of an Earth slowly suffocating due to the effects of the dust bowl in the 2014 film *Interstellar* comes to mind here), but also land art. Perhaps it is up to literature and art – quintessentially man-made media – to

kick-start a revolution in thinking about our planet. Then again, this might be very optimistic.

5. Finally, if you had to speculate, what would you say the ‘texts’ of the Anthropocene are? Or will be?

De Cristofaro: As the Anthropocene entails enormous changes whose exact ramifications are difficult to anticipate, speculative fiction may be one of the genres better equipped to deal with the era. *The Road*, with its depleted post-apocalyptic biosphere, can be considered, as Daniel Cordle and Macfarlane state, an ‘ur-text’ of the era. Another important theme for Anthropocene texts is that of the posthuman, as the era invites us to conceive of a future beyond the human – I’m thinking of Michel Houellebecq’s *The Possibility of an Island* (2005) and Margaret Atwood’s *Madd Addam* trilogy (2003–13) as examples.

Novels are also responding to this new era and its complex network of responsibilities by accommodating increasing timescales and different geographic locations within their form – see, for instance, the previously mentioned fictions by David Mitchell, Jeanette Winterson, Will Self, and John Updike. More broadly, by avoiding Manichaeic logic and normative visions, critical utopias – that is, utopias that reject the idea of utopia as blueprint but preserve it as dream (Moylan, 1986) – and critical dystopias – dystopias that maintain a utopian core (Baccolini and Moylan, 2003) – could play an important role in imagining the future in the Anthropocene and the forms that political praxis should take to confront the paradox discussed in my previous answer.⁴⁴

King: I agree with Diletta that science and speculative fiction may offer useful ways to think about the Anthropocene, as their sometimes vertiginously futuristic set-

⁴⁴ Examples of critical utopias mentioned in Moylan (1986) include Ursula K. Le Guin’s *The Dispossessed: An Ambiguous Utopia* (1974) Joanna Russ’ *The Female Man* (1975), and Marge Piercy’s *Woman on the Edge of Time* (1976). Examples of critical dystopias mentioned in Baccolini and Moylan (2003) include Octavia E. Butler’s *Parable of the Sower* (1993), Suzy McKee Charnas’ *Holdfast* series (1974–1999), and Ursula K. Le Guin’s *The Telling* (2000).

tings can offer useful angles from which to look at the lasting impact of humanity. One need only think here of well-known examples such as Margaret Atwood's *The Handmaid's Tale* (1985) and its exploration of the lasting effects of environmental decline on the continuation of the human race; older works like J.G. Ballard's *The Drowned World* (1962), which imagines the devastating effects of global warming; or the committed cybernetic futurity of William Gibson's *Neuromancer* (1984) and other 'sprawl' novels which chart not only the devastating impact of ongoing urbanisation, but also challenge the human/alien/robot divide, especially in stories like 'The Belonging Kind' (1981).

To this list of more traditional prose novels I'd add more recent comics like Ray Fawkes' *One Soul* (2011), which works in a similar way to Mitchell's text, or the thoroughly posthuman work of Brian K. Vaughan and Fiona Staples in the comics series *Saga* (2012). *One Soul* in particular, traces the commonalities of human experience across different time periods and stages of human civilisation, neatly exposing the lasting legacies of different human activities across the millennia, as characters from later periods find evidence of their forebears in artefacts, monuments and other traces of the kind that Macfarlane discusses in his article. *Saga*, meanwhile, draws a reader into a world populated by distinct but related species that resemble human/animal crossbreeds, and later in its run even features television-headed robots capable of giving birth to live offspring. In this way, *Saga*, for all its space-opera trappings, evokes Wells' *The Time Machine* (1895) in its 'clades' of humanity in his Eloi and Morlocks, and also more recent works like *Blade Runner* (1982), which similarly seek to explore and challenge the machine/human divide.

From my own research, I think that Cormac McCarthy's interest in the lasting impact that humans have had on their environment is a recurring theme across much of his work, far beyond *The Road*. This is especially true in his musings on the impact of stone working and other lasting human activities in *Blood Meridian* – which also looks at the anthropogenic extinction of the Buffalo – and the 'Border Trilogy' as well as, logically enough, his meditations on lasting human legacies in his play *The Stonemason* (1995) and the deep concerns about anthropogenic extinctions in his unpublished screenplay, *Whales and Men*.

Srivastava: I think texts of the Anthropocene would definitely include speculative fiction and cinema, especially those that use realist techniques to imagine a speculative story set in the future – think of a film like *Blade Runner* (1982) and the novels of William Gibson, e.g. *Neuromancer*, written in far-off 1984. What also immediately comes to mind is land art, such as Robert Smithson's *Spiral Jetty*, which dates back to 1970. Land art, with its grandiose designs on the landscape, perfectly encapsulates human hubris, a fascination with the environment, and a desire to draw attention to the importance of preserving it for generations to come. Walter De Maria's *The Lightning Field* (1977) also seemed to harness the forces of nature through its geometrically placed lightning rods in an empty field in New Mexico. In such artworks, which also stem from the now forgotten environmentalist movement of the 1970s, artists literally shape the landscape, rather than merely evoking or representing it.

Cordle: I'm grateful for Diletta's and Daniel's suggestions. I like the idea of reading McCarthy beyond *The Road*, and there are new writers for me to explore there too.

I'd firmly place Ursula Le Guin's *Always Coming Home* (1985) alongside *The Road* because it offers a counterpoint to the bleakness of McCarthy's vision – though I wouldn't say McCarthy's novels lack redemptive moments. Le Guin's novel deals with deep time in a sophisticated way, imagining whole other societies who 'might be going to have lived' in the Californian valleys of the future. In its depictions of the Kesh, who have their own culture – their own pottery, folklore, literature, music, architecture, even grammar – *Always Coming Home* formulates an encyclopaedic vision that involves other and more productive relations between humans and the world. In being oriented 'towards an archaeology of the future', it conjures key questions of human and planetary potential, in dialogue with local experience, broached by the Anthropocene.

I'd also like to see us broaden our sense of an Anthropocene canon beyond fiction. I mentioned the documentary film *Into Eternity* in response to a previous question, but if we also embrace the potential to build an Anthropocene reading list that places science writing – whether that's popular science writing or certain

kinds of scientific papers – alongside conventional literary works, that could be tremendously exciting.

Rowcroft: I agree with the above suggestions; certainly that we can look outside of fictional texts for inspiration – I would also include theoretical texts here, although, once again, reception and dissemination play their part. Kim Stanley Robinson's science-fiction epic *The Mars Trilogy* (1993–9) might offer a useful conceptual starting point. The three bulky novels detail the process of terraforming – making a planet hospitable to human life – and the competing political factions that seek to treat the new planet differently – Reds 'no terraforming', Greens 'planetary change', Transnational Corporations 'planet as resource to be exploited'. In a future age – although not too far ahead of our own – settlers and nationals are given a political agency that often seems lacking in debates about the Anthropocene. Articulating the process of utopia – which is often bitterly contested and fought for – the end of the novel gives a glimpse of a human and non-human species in greater dialogue with the environment. For Robinson, the road ahead is difficult, but not impossible.

Scott: I am going to take up the gauntlet very usefully thrown down by Daniel Cordle, through addressing the idea of a text here in its broadest sense.

For me, many of Beckett's works resonate with the Anthropocene, in their sense of 'deep time' and human culpability and vulnerability. Particularly in performance, they generate powerful visual impressions, whether it is the raging disembodied mouth of *Not I* (1972), Winnie speaking from her increasingly buried position in *Happy Days* (1961), or Hamm with a handkerchief covering his face in the final scene of *Endgame* (1957). Through this imagery, a deep and unspeakable sense of humanity as a furious, but failing endeavour is evoked. Heiner Goebbels' *Stifter's Dinge* (2012) does without the human body at all – this installation of 'sounds, amplified voice-overs, machinic and visual arrangements, objects and materials, instruments and sound machines, light and filmic projections. . . performs itself' (Birringer, 2012: n. pag.). Johannes Birringer describes how the installation 'resonates through a wide

register of impressions of time, history, location, landscape, art and politics, memory, autobiography, ethnographic field recordings, contours of aural and sensorial materiality, noise and music, harmonies and disharmonies', and ultimately 'performs our moving into the indescribable thing we don't know' (Birringer, 2012: n. pag.).

I also think about Ana Mendieta's siluetas, where the fragile impression of her human form is left in the earth, certain to be erased in the near future and yet also marked and preserved there. Arcade Fire's album, *Funeral* (2004), speaks of a world utterly familiar and yet changed beyond recognition in an uncanny, solastalgic evocation of the 'neighbourhood', while Nick Cave could well be the voice of the Anthropocene, especially in the song, 'The Carny' (1986), with its description of a rain-soaked and desolate apocalyptic landscape through which 'the carnay' travels. I also think of Mogwai's post-rock sonic explorations, specifically the soundtrack for French TV series, *The Returned* (2012–), perhaps because of its echoes of humanity, both lost and uncannily returned. I loved the dark poetry of *Beasts of the Southern Wild* (2012) in a similar way, and this film also seemed to speak profoundly of the precarity of our position in relation to the beleaguered environment, while exploring a deep and elemental connection and co-dependence.

The discussion conducted above took place in May 2016, three months before *The Guardian* published two articles that announced the official 'dawn' of the Anthropocene on August 29th. While Damien Carrington (2016: n. pag.) retrospectively dated the new era to nuclear testing in the 1950s, Martin Rees, the president of the Royal Society and Professor of Cosmology and Astrophysics at the University of Cambridge, suggested that the Anthropocene epoch had the potential to 'inaugurate even more marvellous eras of evolution' as humans are forced to look beyond their existence to the possibilities of the 'post-human'. What seems clear, both from these articles and the contributions made above, is that the Anthropocene provides a potent lens for refracting our contemporary moment through our industrial past and increasingly contingent future. In Rees' hopeful article, the twenty-first century emerges as what he calls a 'special' moment from a cosmic time-perspective,

and throughout our 'roundtable' discussion, the possibilities of the cultural and critical responses to the Anthropocene proved more exciting than its depressing origins might imply.

For instance, speaking to what Joanne Scott describes as 'deep and elemental connection and co-dependence', many of our contributors found a body of shared authors, from post-apocalyptic fictions by Cormac McCarthy and Margaret Atwood, to slightly older works of science fiction like Ridley Scott's film *Blade Runner* (1982), and albums by Arcade Fire and Mogwai. For a discussion of a 'planetary concept', our topics also became gratifyingly and perhaps surprisingly broad. Andrew Rowcroft and Neelam Srivastava provided Marxist and postcolonial critiques of the Anthropocene, while Diletta De Cristofaro suggested alternative terms, Moore's 'Capitalocene' being one, that might 'leave room' to challenge both the concept and our work as scholars, which is an idea that Dan Cordle also emphasised.

Overall, our 'roundtable' discussion suggested that, as a concept, the Anthropocene feels both old and completely new, emptying out older literary categories and unsettling discussions of the speculative or futuristic through the definitive declaration of humanity's final, catastrophic impact on and possible removal from the Earth. We might therefore conclude that, as a concept, the Anthropocene has emerged as a theoretical lens through which to view the existing world, one which might, as Daniel King puts it, be 'somewhat gimmicky' but through which our contributors have suggested dynamic, inventive, and ultimately unexpected routes for present and future inquiry.

Competing Interests

The authors have no competing interests to declare.

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