

## Reading for precarious times

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Candis Callison, *How Climate Change Comes to Matter: The Communal Life of Facts* (Durham, NC: Duke University Press, 2014).

Ashley Dawson, *Extinction: A Radical History* (New York: OR Books, 2016).

Dale Jamieson and Bonnie Nadzam, *Love in the Anthropocene* (New York: OR Books, 2015).

Donna J Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham, NC: Duke University Press, 2016).

Elizabeth Marino, *Fierce Climate, Sacred Ground: An Ethnography of Climate Change in Shishmaref Alaska* (Fairbanks, AK: University of Alaska Press, 2015).

Naomi Oreskes and Erik M Conway, *The Collapse of Western Civilization: A View from the Future* (New York: Columbia University Press, 2014).

The old chestnut, what books would you want to be stranded with on a desert island, was, until recently, a thought experiment. With the unspooling of the Holocene, it might become a practical consideration. Tactile materiality, essential to many studies in STS, is an important quality of books. Three of the books selected here are just slightly larger than a postcard. And stacked up, *Extinction: A Radical History*, *Love in the Anthropocene*, and *The Collapse of Western Civilization: A View from the Future* are not even three centimeters high. They are easily portable, fit for an emergency kit. *How Climate Change Comes to Matter: The Communal Life of Facts* and *Staying with the Trouble: Making Kin in the Chthulucene* have the dimensions of most academic books and, even in paperback,

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are heavy. Good basecamp reading; consider these two for the complexities they can add to campfire tales after you've fled for higher ground. *Fierce Climate, Sacred Ground: An Ethnography of Climate Change in Shishmaref Alaska* is standard height and width, but at 122 pages from cover to cover is light enough for travelling in perilous times when voyages become unanticipated sojourns.

The material weight and dimension of books is inseparable from the experience of reading them. At the most mundane level, a book's physicality enters the calculation of how many calories it will take to carry or how long it will take to read. But the books considered in this review stir up notions of energy and time in additional ways. All six texts included here ask how we might comport ourselves within the plurality of relations that include potentially epochal social and ecological changes. Consider the claim that humans experience time in at least four ways: the everyday immediate present, the biographical life course, sacred time or ecstatic consciousness, and the epoch in which we happen to be born. According to many sociological accounts, while we humans often feel we can exert some degree of agency over the first three – by downloading a time-management app or practicing yoga, for example – we often feel incapable of influencing the large sweep of history in which we happen to be alive (Rosa, 2013: 8–13). The concept of the Anthropocene intrudes upon and shakes up this framework by linking human agency with geological events that extend beyond the horizon of everyday life (Chakrabarty, 2012). This knowledge that humans are acting on a planetary scale reanimates questions of praxis (Lorimer, 2016).

The pros and cons of naming a geological age the Anthropocene should be, and are being, debated. There is little doubt that the natural sciences are now authoring narratives of epochal change that exceed the scale of social transformations. How should the eyeblink of ecocidal earth-scour be rendered comprehensible in language? Inscribing the name 'Anthropocene', we are as Marx or Weber, struggling to define the contours of an age whose outlines are now emerging. All of the authors considered in this essay craft writing in different ways to communicate the scope of the changes we now confront. Ashley Dawson compresses the history of extinction into an elegant essay, the succinctness of which mirrors the brief flash of life before death. Naomi Oreskes and Erik Conway put aside their usual habitus of history of science to write science fiction. Environmental philosopher Dale Jamieson teams up with novelist Bonnie Nadzam to pen short stories. Haraway stretches and bends academic conventions, making strange the linear arrangements of a phonetic alphabet. Candis Callison and Elizabeth Marino both write lively narratives with a journalist's economy of words.

Full disclosure: I am Facebook friends with Callison, I recently joined a research group that includes Jamieson and Oreskes, and I am not disposed to write about anyone here in unfriendly terms. My strongest criticism pertains to *Staying with the Trouble*: It would be better if it were edited down to a size more compatible with sudden departures. New ages need new myths and Haraway is unapologetic about her desire to found a narrative that can guide collective earth-bound care. But no one yet knows what origin stories will be told of the present moment. The Anthropocene changes the weight of books. Perhaps only the lightest will survive.

Nadzam's first novel, *Lamb* (2011) is a grippingly disturbing account of a middle-aged man who charms an 11-year-old girl. Nadzam's skill at creating characters who move, talk and behave as real people – not as characters – infuses *Love in the Anthropocene*. A sense of loss saturates the book. Each of its five short stories is concerned less with the catastrophic effects of the Anthropocene, such as millennial droughts and sudden sea-level rise, than with the subtle and mundane but steadily encroaching diminishment that occurs when nature is trammelled and pummelled into an unrecognizable mess. The stories probe the social, emotional and psychological possibilities for humans to form loving relationships with one another when nature is impoverished. In the book's Coda, the authors turn to Iris Murdoch to suggest that, with the imposition of humanity upon nature, we have lost the 'other' of nature that allows us to experience ourselves: 'The Anthropocene threatens to give us only a narcissist's playground – a nature that is only an extension of ourselves and our desires, without independent meaning or sustenance. Loving relationships are not possible in a world that consists only of oneself and one's projections' (p. 207). The Coda is the closest that *Love in the Anthropocene* gets to explicit philosophy. Exemplifying the writing mantra 'show, don't tell', the book's characters dwell in worlds washed with ambiguity and pathos made wrenching through irony. Their desire for meaningful connections is stymied by the pervasive retreat of nature that has left them bereft not only of love but also of the knowledge of what has been lost.

Whereas *Love in the Anthropocene* focuses on dyads and triads in the everyday lifeworld, *The Collapse of Civilization: A View from the Future* steps back to survey epochal transitions from the point of view of an historian treating, in the year 2393, the causes and consequences of rapid climate change. Despite ample evidence about the dangers of climate change, 'Western' civilization's anaemic response did nothing to slow it down. The Penumbral Age descended while sea levels rose not because of a lack of knowledge, but because of the twinned effects of positivism and market fundamentalism. Replete with endnotes citing academic articles and grey literature, *The Collapse of Civilization* is relentless in its description of how present-day trends map into the future. There are hints of playfulness allowed by adopting science fiction as a mode of expression: The book's glossary, or 'Lexicon of Archaic Terms', coins several new phrases such as 'eustatic refugees' and 'synthetic-failure paleoanalysis'. But this does not offset the crushing reportage of political-ecological catastrophes already in motion. The book is written in the style of science fiction typified by Kim Stanley Robinson, holding closely to scientific realism, and its grim assessment of human-induced planetary damage is softened only a little by locating the narrator nearly four centuries hence.

Dawson's self-described primer *Extinction: A Radical History*, at a scant 100 pages, outlines the history of European colonialism, the expansion of global industrialized capitalism, and the accompanying ecocide that is of astronomical proportions: modern humans are obliterating species on scale that is on par with the comet that wiped out the dinosaurs. In other words, the cumulative effect of modernity is roughly equal to an asteroid 10km wide striking the Earth at a speed of 57,800 to 115,000 km/hr. The facts that inform *Extinction* are heavy; they require a light touch to guide them into place

without overwhelming the reader with a litany of destruction. Dawson successfully extends the sociological imagination to encompass the dizzying velocity of ecological devastation. He coaxes his readers along by picking out examples – such as the present-day ivory trade, the history of the whaling industry, the enclosure movement, the Roman sport of slaughtering wild animals in the Coliseum – to anchor *Extinction*'s tour through the unfolding catastrophes that are occurring just beyond the myopic presentism that features in modern social life.

So there it is: three pocket guides, three micro-doses, that, taken together, situate the human at the intersection of the everyday and the epochal. Interventions into the Anthropocene, they locate us within the strata, the layers of non-fungible human detritus that future archaeologists will have to excavate. Shuffle, deal and read these books as if they were a deck of Tarot cards. But questions still need to be asked: What are the details of this stratified mass that exerts such gravity? What is it, exactly, that pulls down on the upward exuberance of life in flight?

Candis Callison's *How Climate Change Comes to Matter: The Communal Life of Facts* is a multi-sited ethnography that documents the ways in which five different social groups make climate change an ethical, moral and political problem. Using methods inspired by Wittgenstein's 'form of life', Callison shows how climate change becomes real in specific contexts: Inuit living with unfolding changes in the Arctic, journalists who write newspaper articles about climate change and the scientists who advise them, evangelical Christians whose religiosity compels them to minimize the damage done by climate change to the earth and its people, a corporate social responsibility organization that works with environmentalists and corporations, and scientists who provide advice for decision-makers. Just as Jasanoff (2005) documents the 'civic epistemologies' associated with three national cultures, so too does Callison show how the realities of climate change – and attendant ethical and moral implications – are co-produced in different forms of life.

The book's treatment of epistemology is symmetrical. Readers learn that many evangelical Christians in the Creation Care movement want the 'facts' of climate change to be 'blessed'. In this case, the linearity of the Enlightenment model is turned on its head: 'Action isn't driven by facts; rather, action is assumed and the work required is to get the facts trusted' (p. 149). In the chapter on corporate social responsibility, we hear how investors are not interested in climate science *per se*, but only in how climate change can be articulated within idioms of risk already familiar to Wall Street. The nexus of print media, new media, science, politics and policy is covered in two chapters that detail the plurality of ways that the expertise and credibility of scientists and journalists is constructed. For the Inuit in the Arctic, 'climate change' is often not regarded as a pressing issue; rather, even as the Inuit grapple with profound changes in environments that are indivisible from social realities, they reject the scientific universalism implied by 'climate change'. This theme is also picked up in Marino's book.

Elizabeth Marino writes *Fierce Climate, Sacred Ground: An Ethnography of Climate Change in Shishmaref Alaska* with a deep familiarity with Shishmaref and those who call it home.

The first time I flew into Shishmaref it was 2002. I was a twenty-two-year-old newspaper reporter in a brand-new goose-down jacket holding tight to the seat cushion on a single-engine Alaska bush plane as it bumped through the low layer of cloud. (p. 1)

With these opening lines, Marino introduces her long-term relationship with the village. She returned repeatedly over the following decade in several roles, interviewing residents about their observations of climate change for the US Army Corps of Engineers and then conducting fieldwork as an Anthropology PhD.

In August 2016, soon after publication of Marino's book, the residents of Shishmaref voted to relocate the village off their island in the Chukchi Sea and away from the coastline. While this might seem a drastic measure, the possibility of relocating the village was first discussed by residents and the US Army Corps of Engineers in the early 1970s. At that time, unusually large storms threatened the village. Bureaucrats began operating amidst a mangle of acronyms to conduct seemingly endless studies. The Army built seawalls to stop coastal erosion but the seawalls were not effective and might even have led to more damage. Now, with accelerating warming, permafrost is thawing, sea level is rising and sea ice, which dampens the effect of storms, is diminishing. Combined, these factors lead to increased rates of flooding and coastal erosion. In the past decade, numerous magazine and newspaper articles about climate change feature Shishmaref. Some narratives strip the residents of agency and portray them as powerless victims of greenhouse gases, casting them as some of the world's first climate refugees. The historically grounded account in *Fierce Climate, Sacred Ground* adds welcome depth and nuance to such environmentally determinist stories.

The book has seven chapters. The fourth, 'Seal oil lamps and pre-fab housing: A history of colonialism in Shishmaref', reveals a wealth of detail. We learn, for example, that the *Tapqagmiut* were the linguistic and cultural group who lived for many centuries in the area around Shishmaref. The *Tapqagmiut* were mobile, changing location with seasonal hunting and fishing opportunities. They overwintered at Shishmaref, which, among its other features, is close to the ocean, where sea mammals can be hunted from the sea ice when it forms in the winter. With colonialism came enforced settlement and the *Tapqagmiut* became *Kigiqtaamuit*, an Iñupiaq term for families who previously only overwintered in Shishmaref. The federal government built a post office in 1901 and a school in 1906. Lutherans built a mission in 1930. Pre-fab houses from the Department of Housing and Urban Development arrived in the late 1960s. Marino's treatment of the *Tapqagmiut* and the *Kigiqtaamuit* does justice to the history of how colonialism has affected the people and their homeland. It becomes abundantly clear that the *Tapqagmiut* and the *Kigiqtaamuit* were perfectly well adapted to ecological changes such as coastal erosion; it is colonial infrastructure that is vulnerable.

The lingua franca of policies that address the 'human dimension' of climate change in the Arctic – from international organizations such as the IPCC and the Arctic Council to national and regional governments – is the discourse of vulnerability and adaptation. As Marino details, there are several antecedent conceptual frameworks that inform this literature. The 'natural hazards' approach treats human vulnerability as the outcome of stimuli in nature. But as Marino demonstrates throughout her book, a more robust conception of vulnerability must include the history of colonialism and social relations of power. One of the strengths of *Fierce Climate, Sacred Ground* is that it sets the interweaving of colonialism and climate change in a non-reductive narrative that is accessible to a variety of audiences, including policymakers. As Marino phrases it, '[i]s the risk posed to Shishmaref the product of climate change or the product of a history of development that ignored local knowledge and removed local adaptation strategies?' (p. 58).

Climate change is a funny beast. Many of the public strategies urging action on climate change foreground the climate sciences as if they alone are enough to mobilize people. Popular discourses often assume that securing a desirable social response to climate change is a matter of communicating the science clearly; once the public understands the scientific basis for climate change, so this line of reasoning goes, they will demand appropriate political action. But, as Callison and Marino show, for scientific understandings of climate change to become meaningful, they must be taken up within the multitude of networks of meaning-making within which people are differently located. Callison's multi-sited ethnography drives home that there is no single stable way of making climate change meaningful as a social problem. But if this is the case, what does the plurality of epistemological grounds mean for the ethics and politics of climate change? Is it possible or desirable to maintain fidelity to the climate sciences while also embracing this plurality? An additional question needs to be addressed. People who are made vulnerable by the history of modernity, development and the globalized political economy disproportionately experience the worst climatic impacts. How, then, should writers and readers in the Anthropo-scene address its 'Northern, urban and exclusive' focus (Lorimer, 2016: 17)?

Callison and Marino disabuse us of any desire to answer this question by configuring the Inuit as climate refugees. They each document the multiplicity of relations – historical, ethical, material – that situate the problem of climate change. The physical environment that the Inuit experience as indivisible from their social, cultural and spiritual worlds is being eroded by greenhouse gases released by non-Arctic populations. But the geophysical agency that is exercised via atmospheric carbon dioxide cannot automatically be translated into a universal vernacular of harm and responsibility. As Callison shows, the Inuit have constructed climate change as a matter of human rights precisely because of a holism that does not allow for a separation of 'nature' and 'culture' in the first place. For those of us who do not dwell in the Arctic, recognizing the material impacts of geophysical agency is insufficient; such recognition needs to be accompanied by a shift in how ethics is understood and practiced. Ethics in such circumstances requires a different sensibility, one that is oriented to listening to and for differences. As Callison puts it, '[c]onfigured as differences in epistemology, "speaking up for the facts" might require as much listening as it does speaking' (p. 245). Haraway might see this practice of listening as a form of staying with the trouble.

*Staying with the Trouble: Making Kin in the Chthulucene*, has eight chapters; two are translated from original publications in French, five are edited and revised from published English articles, and one chapter is new. In the introduction to *Staying with the Trouble*, Haraway promises to use words to braid her and her readers 'into beings and patterns at stake' (p. 3). And indeed, her unique writing style embodies the continually overspilling abundance of life that she wishes to nurture. The book weaves together material from diverse sources, including the biological sciences, experiences with animals, activist interventions, artistic practices and community gatherings, and is peppered liberally with shout-outs to fellow scholars, mentor references, teacher accolades, and friendship tags. Haraway doesn't proselytize as much as leave room for her readers to practice self-conversion.

The book's second chapter considers the case for renaming a geological age the Anthropocene, but argues that one name alone is insufficient. 'Capitalocene' and 'Plantationocene' are ways of signalling the history of social relations that have led to the current predicament, and as such should be folded into our vocabulary. To move away from any inherited anthropocentrism of these terms, Haraway invokes earthly forces and a spidery anima to create her own neologism, the Chthulucene, which she is quick to distinguish from H. P. Lovecraft's 'misogynist racial-nightmare character' whose name is similar (p. 101). Haraway's aim is to foster and nurture the telling of stories by which we live, gathering up narratives from amongst the multitude of beings cohabiting this planet.

Ethical action in Chthulucene is committed to attending both the flourishings and the extinctions of forms of life. To communicate this sense of ethics, Haraway embraces the abbreviation SF as a stand-in for science fiction, string figures, speculative feminism, speculative fabulation, science fact, and so forth. The SF of string figures refers to the childhood game in which two or more people make patterns with a loop of yarn stretched between their fingers. The game involves give and take, moments of stillness and moments of action, subtle adjustments of each to the other, a continual process of creating temporary structures that make present what wasn't there before. The SF of science fiction is woven throughout the book, with references to the work of Ursula Le Guin, Kim Stanley Robinson, Octavia Butler and others. But the final chapter of the book is written entirely in the mode of science fiction or, perhaps more accurately, science fabulation.

This final chapter of *Staying with the Trouble*, 'The Camille stories', the book's sole new chapter, imagines communities of humans in the Chthulucene purposefully dismantling anthropogenic privileges and practicing radical kinship with 'oddkin'. One way of dwelling with earthly beings is to genetically intertwine homo sapiens with other 'critters', and the chapter follows the story of five generations of Camille, a being intertwined with the Monarch Butterfly. Science fiction, here, builds visions, future imaginaries of the shape of the world in which we might live. Oreskes and Conway use science fiction in a different manner. In an interview at the back of *The Collapse of Western Civilization*, they say that one of the motivations for writing the book came from a frustration with how the climate sciences are being communicated. The book's purpose is clear: to extend present-day trends into the future and portray potential consequences. In this sense, *The Collapse of Western Civilization* is a parable to instruct us on the devastation wreaked by unfettered or unchecked self-interest. In *Extinction*, Dawson considers the political interventions that others have put forward, including rewilding, de-extinction and biological capitalism. He argues that we must confront capitalism because it has 'unleashed waves of enclosure, imperialism, warfare, and ecocide over the last five hundred years that have benefited a very small segment of humanity while displacing, immiserating, enslaving and destroying countless numbers of people, animals and plants' (p. 98). These critiques of neoliberalism and capitalism are echoed and repeated in *Staying with the Trouble*. But Haraway layers in an additional move. In Lorimer's (2016: 14) words, a 'critical dimension' of the mode of science fiction that Haraway adopts is 'to make space for alternative future subjects, experts and authorities that might narrate, claim and inhabit speculative futures'.

In some respects, the sense of ethics that Haraway wants to communicate is not so far from Nadzam and Jamieson's. In their Coda to *Love in the Anthropocene*, they hold out hope for

the possibility of transcendent love, not directed toward a particular object and subject to chance or contingency, but a big love that can be cultivated and practiced in a way you might exercise a muscle. ... This kind of love would place no limit on the number of people, places, animals, or things that could be loved. (pp. 202–203)

Given the plurality of forms of life through which climate change comes to matter, the difference between Nadzam and Jamieson's 'transcendent' love and Haraway's love for earthly immanence is, on one hand, moot: they both share a love for an-other within a context of radical indeterminacy. But on the other hand, even if the Anthropocene compels witches and Christians alike to care for the Earth, differences in the relations of power that have brought both to this point must still be acknowledged. Haraway's ethics – staying with the trouble, drawing from postcolonial feminist Marxism (among other things) – involves listening for the potential for revolutionary transformation. As a sense of ethics, staying with the trouble is attuned to emerging conditions and the possibilities we might make manifest in relation with 'oddkin'. As a book, *Staying with the Trouble* is vulnerable to being left on the shelf when the time comes to move.

One of the book's greatest strengths is also its Achilles heel. Pulling together essays into a single volume makes Haraway's recent thinking on the Anthropocene easily accessible. However, at times the book has the feel of a compilation rather than the consistency of a studio album. In part, this can be traced to Haraway's writing style, which is directly expressive of her theoretical and practical interventions. Haraway is writing against the legacies of the enclosure movement, against the sciences of division and segregation, and against the powers of subjugation and oppression. But she also is writing for a particular vision of collective life, which is a difficult task: As she says, 'accountabilities are extensive and perpetually unfinished' (p. 114). Using words to trace the relations and connections between concrete particularities within the infinite fields of being involves listening to that which is always slightly beyond words. Translating what is heard into writing is a messy process and can become unwieldy at times. To be sure, the book is excellent, but when *Staying with the Trouble* is stacked up next to the three postcard-sized books reviewed at the outset of this essay, one cannot help wishing that Haraway distilled her analysis into a more easily transportable volume.

The conditions signalled by the term 'Anthropocene' compel authors to write differently. But so, too, do they compel us to read differently. We live in an interregnum, a moment in time in which potentially epochal changes are signalled but origin stories remain contestable. Given this openness, which is not guaranteed to persist, practices of reading in the Anthropocene, it seems to me, must be peripatetic and omnivorous: fiction, non-fiction, philosophy, anthropology, policy studies – all of this and more must be gathered up. The Anthropocene bears on the physicality of books. The feel of a book in your hand changes when you consider how the foundations of homeland, both yours and those of others, are being rendered untenable.

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