



Climate change and migration

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Abstract

“Climate change and migration” shows that migration is a complicated phenomenon that is well documented in literature and film, and while it has many causes, forms, and effects, migration has been both a result of climate change and, at times, its cause. This article will show that how we conceptualize the topic of “climate change and migration” across a broad spectrum of cultural forms is crucial to how we understand and deal with the many issues that climate change will cause for global populations. To see the topic simply as a matter of American national security—as, for instance, some of Barack Obama’s comments have intoned—is to perpetuate the patterns of history that have favored unequal development and the production and maintenance of what Amitav Ghosh has called “disadvantage in terms of both wealth and power” (Ghosh, 2017, p. 110). To see nature or climate solely as the cause of migration, similarly, is to misapprehend the roots of the issue. Comparative analyses reveal interconnections of real political, economic, and environmental problems with fictional renderings of solutions. Film and literature show more starkly than news media how shortages and want are the result of a scarcity of democracy and of an extractive ethos that both relies on and maintains global inequities. “Climate change and migration” brings together data that questions the ideology of continual growth, limitless possibilities, and infinite resilience that has put the finite resources of the planet into jeopardy. Scholars in the Humanities have much to offer, both in producing narratives that popularize in concrete terms abstract knowledge about climate migration and in calling mainstream media to task for its failings and inaccuracies. The complexities and nuances of the topic of “climate change and migration” require honesty and a firm commitment to avoiding rarefied theorizing that lacks contact with material realities.

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Migration is an integral part of the human condition and has been well documented along a broad spectrum of literary and filmic media. It is a remarkably heterogeneous phenomenon, one that takes many forms. It may be temporary, or it may be permanent. It may be forced, or it may be chosen. It is sometimes foreseen, and it is sometimes not. One of the greatest immediate problems we face is with *how* we conceptualize climate induced migration. A film such as Roland Emmerich's *The Day After Tomorrow* has a frigid world with Americans having to migrate to Mexico, but the more pronounced trend in climate change fiction has been to imagine heat-related climate refugee scenarios, with flooding perhaps offering the most common trope. Indeed, flood narratives have become a subgroup of cli-fi.¹ Often the result is a scenario opposite to what Emmerich imagines, with migrations going northward and inland rather than simply southward. There are, moreover, implications in some of the framings (including Emmerich's) of climate migrations that are simply counter-productive. Focusing on the national security challenges that climate migrations pose, for instance, skews the issue, and often the very *terms* we use in describing climate refugees participate in ecophobia. While the hard sciences have much to offer in understanding the complex relationships between climate change and migration, the utility of comparative scholarship growing out of the Humanities has long been underestimated, scholarship fundamental both in the production of narratives that popularize abstract knowledge about climate migration in concrete terms and in highlighting the failings and inaccuracies of mainstream media on the topic.

While there are many, many factors that drive migration, as the authors of the compelling *Atlas of environmental migration* explain, "climate and weather-related hazards—in particular, [food and water shortages], floods, storms, and landslides—cause the vast majority of human displacements worldwide." They go on to explain that "the degradation of ecosystems is [now increasingly understood as] a key driver of migration and displacement" (Ionesco et al., 2017, p. 46). Historical movements show that climate change and migration are causally interchangeable. In other words, migration has brought on climate change, and climate change has brought on migration. The two are entangled in more ways than we at present might imagine, as though current and expected mass migrations are novel and as though they are resultant rather than causal in relation to climate change. Noting this does not diminish—certainly is not intended to diminish here—the gravity of displacements that are coming our way.

It is crucial, however, to acknowledge that mass migrations are an integral part of human history and that although they have had auspicious results for the people on the move—in addition to having habitually unacknowledged environmental effects—migrations have, as often as not, had catastrophic results for others. For instance, estimated to be up to 112,553,750 strong pre-European contact (Jacobs, 1974, p. 125. See also Denevan 1992, *passim*). the native populations of the Ameri-

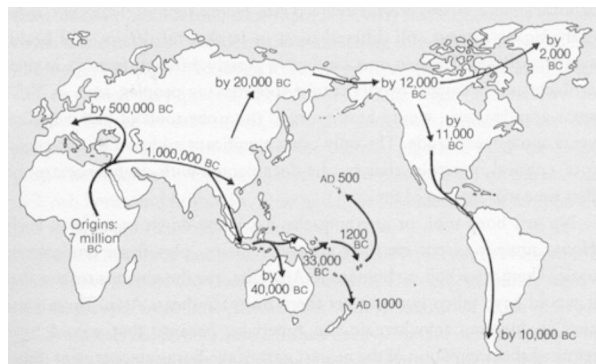
¹ Within this tradition is a great many texts, including Amitav Ghosh's *The Hungry Tide*, Nathaniel Rich's *Odds Against Tomorrow*, Margaret Atwood's *Maddaddam* trilogy, Maggie Gee's *The Flood*, Stephen Baxter's *Flood*, J.G. Ballard's *The Drowned World*, and others.

cas declined a staggering 95%—95%!—at its lowest point.² While this horror may have been favorable to racist colonizers looking for a terra rasa, it was and remains an unfathomable tragedy and crime against the people who were already there. Superior European weaponry was only a small part of this genocide, the bulk coming of it from disease—smallpox, tuberculosis, measles, and syphilis in particular—to which the indigenous Americans had no exposure and therefore no immunity. It is hardly the first time in history that migrations have brought diseases that have wiped out astounding numbers of people. Invading Mongols brought the bubonic plague to Europe, catapulting infected corpses over city walls at times to bring death to the inhabitants (see Wheelis 2002). The Black Death, as it became known, killed upward of 50% of the European population—some 40 million. Obviously with both increases and decreases in the size of a population, there will be changes in the climate as well.

Fictional representations of these changes offer a wide variety of potential scenarios. Massive changes in the world's thermohaline circulation patterns produce a radical cooling in Roland Emmerich's *The Day After Tomorrow*. The exodus southward for the warmer climes of Mexico offers a rather sappy and shallow picture of the humbling of the giant imperial America before the very country it had so long held subject. The news reports in the film are that "Mexican officials [have] closed the border in light of so many U.S. refugees who are fleeing south in the wake of the approaching storm." It is a palpably sappy moment, and the words of the film's U.S. Vice-President ring hollow: "we have become guests in the nation we once called 'the Third World.' In our time of need, they have taken us in and sheltered us, and I am deeply grateful for their hospitality." It is a deeply patronizing scene, written with condescending assumptions of American entitlement: the long-oppressed Mexico gladly serves the United States. The hierarchical model remains unchallenged, with Mexico expected to serve its northern neighbor and with the basic economic models of production entirely unaddressed.

Moshin Hamid's *Exit West* resists the characterization of climate migrations as national security threats by showing—and normalizing—the increasing inevitability of such mass movements. The migrations are a daily global event. They are about

Fig. 1 The spread of humans around the world (Diamond, 1997, p. 37)



² These numbers are not hard-and-fast. More conservative estimates put the number at 90%, a percentage that Jared Diamond favors (Diamond, 2005).

survival. There is nothing peculiar about them any more: “the apocalypse appeared to have arrived, which is to say that while changes were jarring they were not the end and life went on” (Hamid 2017, p. 217). Even so, as Ben De Bruyn has argued, “the novel’s normalizing notes do not cancel out migration’s disquieting aspects, especially the militarized management of racialized subjects by rich countries” (De Bruyn, 2020, p. 6). Moreover, it is the rich, fully industrialized nations that are seemingly untouched by environmental deprecations (at least in the sense of forcing the migrations Emmerich imagines), while these anthropogenic environmental events are disproportionately affecting the Global South, often producing substantial conflict and social movement.

A novel such as Paolo Bacigalupi’s *The Windup Girl* actively engages with questions about how strife and division are driven by global capitalism. Sea levels have risen, people have migrated in search of safer places, and the basic infrastructures that we enjoy today have collapsed in the novel. Food is an issue—perhaps the main issue—of the story. Indeed, it is the various struggles for food that drives the plot. The very act and fact of migration itself is historically prompted by a quest for food, a point Kwame Anthony Appiah makes ever so subtly in his extraordinary work on cosmopolitanism: in the long and complicated history of the people who have migrated, he explains, “most were looking for food” (Appiah, 2006, p. xviii). Most (perhaps “many” would be a better word), but certainly not all. We know for certain that water has also been an incentive for migration and that current water shortages are an effect of anthropogenic climate-change. It is certainly *not* entirely the shortage of rain (or the shortage itself the sole result of climate change)—but climate change is one of the several main causes, another being mismanagement. As Rob Nixon has recently explained, “we may all be in the Anthropocene but we’re not all in it in the same way” (Nixon, 2018, p. 8): “According to the United Nations Refugee Agency,” he explains, “in 2014, the number of displaced people reached 59.5 million people, the highest number ever recorded. One out of every 122 humans is now either a refugee, an asylum seeker, or internally displaced” (ibid., p. 10). Those numbers in and of themselves are staggering. To give some sense of perspective, that number is almost the same as the population of Italy. It is difficult to imagine.

Imagining the unimaginable is what cli-fi does best, and central to these imaginings is a consciousness of both the inevitability of mass migrations and of the profound social, political, and economic destabilizations such migrations will incur. In imagining the future, Naomi Oreskes and Erik M. Conway see China dealing with internal migration proactively in their fictional documentary-style *The Collapse of Western Civilization: A View from the Future*: “When sea level rise began to threaten coastal areas, China built new inland cities and villages and relocated more than 250 million people to higher, safer ground. The relocation was not easy” (Oreskes and Conway 2014, p. 51). This fictional view represents China as making proactive and correct decisions, and this stands in stark contrast with mainstream Western media’s often anti-Asian racist stance about the things that China does. For instance, Western media pilloried China for its lockdown measures at the beginning of the COVID-19 pandemic, only to see Western nations follow suit with their own lockdowns (beginning in London on March 20, 2020). The point here is that Oreskes and Conway—no doubt aware of China’s experience with preparing proactively for inter-

nal migration (most recently with the displacements caused by the construction of the Three Gorges Dam)—narrativize solutions that China has explored in the past and may again explore in the future. It is a fact perhaps obscured by the systemic nationalism of mass media (which is not to imply that China—or any other country—is free from its own version of systemic nationalism).

At a time of increasing Chinese wealth and increasing resentment toward mainland Chinese money heavily inflating the real estate of many places in the world (Cheju in Korea; Vancouver in Canada; LA, San Jose, San Francisco, and New York in the United States), combined with 1] neo-nationalism and 2] xenophobia toward immigrants (in the US and Europe), we are headed for the perfect storm. Add to this the growing recognition that “climate change,” as Barack Obama explained, “constitutes a serious threat to global security,” and it is clear that we need to adjust our behaviors (see Cama 2015). It is a point John Kerry, Obama’s Secretary of State also made: “The threat of refugees as a consequence of climate change is an enormous national security issue” (see Neville 2013). Mr. Trump and his views are the logical trajectory of the nationalism and xenophobia of all of the previous American administrations—Republican primarily but also Democratic. The Trump administration, in its denial of climate change and in its withdrawal from the Paris Climate Accord (and for a great many other reasons) was both dangerous and reckless. The increasing militarization of the South China Sea and of North Korea takes form and significance in this context. It is a context both of increasing uncertainty wherein Trump shakes hands with dictators and his people can talk about “alternative facts,” a post 9/11 Age of Terror and Climate Change context in which environmental and military crises are increasingly fused in mainstream media. Paolo Bacigalupi’s *The Windup Girl* offers a terrifying trajectory point for humanity. We need to be perfectly clear that the shift from Obama to Trump is the shift from seeing climate change to seeing climate *refugees* as a clear and present danger to national security.³ Trump and his ilk just do not *understand* what is going on in the world.

Among the more creative and original responses to the challenges posed by climate-induced migrations is Kim Stanley Robinson’s *The Ministry for the Future*. This novel actively engages with questions about rights—specifically the rights of future generations. It is a long narrative based loosely on real events and practices and is perhaps arguably more attractive to climate change activists than to literary scholars, sacrificing, as it does, depth of character and plot for political commentary. While the novel seeks both to imagine a viable economic solution to our growing climate crises and to recognize the inequities between those who cause and those who suffer from climate change and severe weather events, the narrative ultimately does not offer any kind of viable attempt at truth and reconciliation that would benefit long-ignored groups, dispossessed subjects, and climate refugees and migrants. In real life, Monique Barbut, the Executive Secretary of the United Nations Convention to Combat Desertification, has recently made some observations that I would like to quote at length here because they bear so centrally on the topic:

³ Ruben Andersson sees this as “a counterproductive framing of mobility-as-threat” model that needs to be dismantled (cited by De Bruyn 2020, p. 5).

Long ignored, migration and environmental degradation are both, out of necessity, forcing their way up as political agendas. The fact that this is happening, at the same time, is not a surprise. As climate change and environmental degradation occur, the world's rural poor are hit first and hit hardest. Three out of four rural people are poor, and 86 percent depend on the land for survival. Globally, at least 1.5 billion people rely on degrading land buffeted by forces seemingly beyond their control. In a time of dramatic climate change, as the land dries up and sea levels surge, competition for vital natural resources will accelerate and communities crumble. The instances of seasonal migration that can already be observed in response to poor harvests may become cases of permanent migration in the event of crop destruction of extreme droughts (Barbut, 2017, p. IX).

This describes what Robinson terms “the tragedy of the time horizon,” and it is perhaps tragic not only because “we can’t imagine the suffering of the people of the future” (Robinson 2020, p. 172) but that we don’t understand—or even seem to *want* to understand—the sociopolitical aspects of it all. The topic does not even arise in the novel.

Our climate troubles will invariably lead to further geopolitical conflict, and many narratives point in the direction of Asia—ironic, since the per capita CO₂ footprint is significantly smaller in Asia than in the West. To put things in perspective, China (considered by many to be one of the worst polluters) has a per capita CO₂ emission rate of 7.38 tons; Canada (considered by many to be one of the cleanest nations on earth) has a per capita CO₂ emission rate of 18.58 tons (see Worldometer 2021).⁴

The Intergovernmental Panel on Climate Change (IPCC) report released October 8, 2018 at the 48th Session of the IPCC in Incheon, South Korea stated that we have until 2030 to change things and that things are going to get really bad after that time. The report says that “Global net emissions of carbon dioxide would need to fall by 45% from 2010 levels by 2030 and reach ‘net zero’ around 2050 in order to keep the warming around 1.5 degrees Celsius. Lowering emissions to this degree would require widespread changes in energy, industry, buildings, transportation and cities,” the report says (IPCC 2018a). It is “possible with the laws of chemistry and physics to limit global warming to 1.5 degree C,” said Jim Skea, co-chair of IPCC Working Group III, “but doing so would require unprecedented changes” (IPCC 2018b). Yet, anyone with a piece of paper and a pencil can do the math and figure out that it took the fully forested earth 380 million years to sequester the amount of carbon that we have released in a mere 150 years, and one can also understand that because this remains in the atmosphere, the numbers of the IPCC simply do not compute on any level. Even if they did (and to be clear, they do not), net zero or not, we are in for some warming, and the stark reality is that we are *never* going to hit net zero; nevertheless, it will be interesting to see how we try to achieve it and to get control of runaway climate change.

While failing to get control of runaway climate change will produce unprecedented migrations, the hard realities of a finite world are that there are only so many places to run. In a world completely ruined, there are very few possibilities. Cormac

⁴ This sentence appears in my “Wang Ning and Shakespeare,” pp. 259–60.

McCarthy imagines nomadic migrations in *The Road*, with the dwindling remnants of humanity moving from place to place in search of food and safety, but the novel offers little insight into how class might figure into these migrations. Films such as *Wall-E* and *Elysium*, on the other hand, show the monied going to space for refuge. Similarly, in Emmerich's *2012*, those with enough money can take refuge in giant arks. While the privileged classes will inevitably experience forced migrations much differently than the poor, the privileges of the rich may end up being simply temporary and little more than a deferment of the inevitable.

Control over the environment or over groups that want to reformulate and rearticulate global configurations of power, inhabitation, and life are, of course, illusory and temporary. One thinks of Ozymandias. Movements of people through environments have roots in environmental factors that have long played a role in migration patterns, as well as in conflicts, and there are clear hypothetical relations between climate change, on the one hand, and war, migration, and terror on the other. A March 2015 article entitled “New Study Says Climate Change Helped Spark Syrian Civil War” (see Holthaus 2015) argues, for instance, that there are relationships between the historic drought (2006–2010) that afflicted Syria with both the events apparently happening within that country and with the creation and movements of ISIS (see also Strozier & Berkell 2014; Fountain 2015; and Abrams 2015). But we need to be very careful with these kinds of things, and I mean particularly about having actual evidence rather than mere theory. If the hypothesis is to have real credibility that environmental issues are related with the development of things such as ISIS and therefore forced migrations (the effect of terrorism, itself the effect of anthropogenic climate change), then there needs to be empirical evidence. Simply drawing a link between drought and the growth of a terror group looks, in and of itself, to be ecophobic, nature being to blame in such a vision, even though the drought itself was an effect of anthropogenic forces. It seems to me that this kind of blaming is something that we should be careful to avoid. To hypothesize this, then, means to suggest that terror groups grow out of anthropogenic events, out of climate change caused by human actions rather than as a result of nature *per se*. This may sound circular or may seem a kind of spinning of into philosophical obscurantism, so, to clarify, we might word it thus: humans cause climate change and thus perhaps also food shortages, and this could result in the formation of terror groups and thus in forced migrations. The causal root, then, of the potentially forced migrations is the human actions that caused the climate change (without which no drought, no ISIS, no forced migrations). Again, however, it bears mentioning that while forced migrations are an inevitable effect of climate change, the relationship between climate change and terror groups is hypothetical and requires a lot of credible empirical data before we can accept it as fact. Such data showing a coinciding of drought and terrorism may lead to empirical data about a causal relationship between the two, but representing nature as the culprit behind terrorism is ecophobic. Even so, such an idea, because it strikes so visceral a nerve is marketable indeed.⁵

⁵ Parts of this and the following paragraph appear in slightly different form in my *The Ecophobia Hypothesis*, p. 37.

Whether rooted (at least in part) in environmental issues such as food shortages, resource shortages, or water shortages, events such as European colonialism and the more contemporary advance of ISIS are conscripted to compelling narratives that develop a story of collective memory. Each defined by an ethics of exclusion, the anthropocentrism and ethnocentrism that have largely delineated the patterns of migration, settlement, and colonization (and therefore our world map) have also revealed the unexpectedly radical reach of mortal dangers. When ISIS chops off the heads of dozens of Christians and when Hamas fires missiles into a civilian Jewish population, as when the loggers of British Columbia were cutting down thousand-year-old forests and leaving a horrendously denuded landscape, the precondition for these violent narratives of cultural progress and acceptable migration is callous indifference or outright aversion to natural environments. If we are not careful, such indifference will simply be perpetuated in the very discourses about the problems that indifference and ecophobia create. The very terms we use are important in how we understand and represent migrations.

Climate refugee, environmental refugee, environmentally displaced migrant, climate-induced refugee, ecological migrant, eco-migrant, environmentally-induced migrant, climate migrant, environmentally displaced person, eco-refugee, climate-induced migrant, environmental migrant, ecological refugee, ecologically displaced person: whatever the term, the conceptual framing is dangerously ecophobic, and I want to state (at the risk of sounding controversial and appearing to miss the point or diminish the salience of the topic) that we need to be careful to understand that it is not the climate or the environment that are the threat here, and to accede to such a personification is to fail to understand and to recognize that the causes of the changes that are propelling migration are human. Remembering that the causes are human and not environmental is necessary for several reasons: 1] it forces an understanding that it is not some unknown natural forces that are causing people to move, 2] it pulls our thinking out of the ethical position that frames nature as the villain (one that then would logically need to be fought and controlled in such an ethical schema), and 3] it shows that environmental justice and environmental racism are the direct results of inequitable resource and economic distributions and that to see the victims of these structures as a threat to national security is simply dishonest and radically counter-productive.

In a scathing exposé of how “poverty is [. . .] an effect of the inequities created by the carbon economy[. . .] the result of systems that were set up by brute force to ensure that poor nations remained always at a disadvantage in terms of both wealth and power” (Ghosh, 2017, p. 110), Amitav Ghosh maintains that “our lives and our choices are framed in a pattern of history that seems to leave us nowhere to turn but toward our self-annihilation” (Ghosh, 2017, p. 111). It is a careful policing of knowledge by industrialized nations (and use of such knowledge as a weapon) that produced this pattern of history, a history of industrialization that is premised on the perceived necessity for unequal development. Quoting Mahatma Ghandi’s comment that should “India [. . .] ever take to industrialism after the manner of the West [. . .], it would strip the world bare like locusts” (ibid., 111), Ghosh goes on to explain “that the universalist premise of industrial civilization was a hoax; that a consumerist mode of existence, if adopted by a sufficient number of people, would quickly become

unsustainable and would lead, literally, to the *devouring of the planet*” (ibid., 112—emphases added). For Ghosh, Ghandi’s comment “goes to the heart of the matter: numbers” (ibid., 111). From an environmental justice perspective, the implications are enormous. It is absolutely imperative to understand that Western knowledge production (and the industrial development such knowledge regimes produce) is unsustainable. And it is not simply, as Ghosh ably shows, the numbers that are the problem; rather, the problem is that entire epistemological framework services a mechanistic, exploitative, and extractive ethos characterized by an ideology of continual growth, limitless possibilities, and infinite resilience—all on a finite planet.⁶

The consistency with which writers across a broad spectrum of media address climate-induced migrations bears testament to the urgency of climate change and to the utility of comparative literary approaches to it. The “devouring of the planet” Ghosh describes produces different experiences, depending on geographic, economic, sociopolitical, and ideological matters, but there are also biological matters that warrant attention, some of which seem at best difficult to control. There are compulsions that are perhaps less within our control than we would wish. Ian McEwan offers a particularly compelling vision of this in his cli-fi novel *Solar*. On a business class flight circling over London, the character Michael Beard wonders about the dangerous human impulses toward excess and its effects on global warming. He wonders, “how could we ever begin to restrain ourselves? We appeared, at this height, like a spreading lichen, a ravaging bloom of algae, a mold enveloping a soft fruit—we were such a wild success. Up there with the spores!” (McEwan, 2010, pp. 127-8).⁷ It is reasonable to question the feasibility of halting or reversing climate change, given that human beings do what other species do: we grow *semper sursum*. Without natural predators or obstacles, any species will thrive to excess. We do not differ from other species in this. It is in the genetic nature of all living organisms to do so, a point Darwin himself makes: “There is no exception to the rule that every organic being naturally increases at so high a rate that if not destroyed, the earth would soon be covered by the progeny of a single pair” (Darwin, 1996, p. 54). It seems that moderation is indeed *not* a part of our genetic heritage.

Nature is not moderate. It is characterized, Elizabeth Grosz explains, by “an invariable tendency to superabundance, excessiveness, the generation of large numbers of individuals, in the rates of reproduction and proliferation of individuals and species” (Grosz, 2008, p. 30). Nature revels not only superabundance, but in diversity, as Darwin also theorized: “more living beings can be supported on the same area the more they diverge in structure, habits, and constitution, of which we see proof by looking to the inhabitants of any small spot or to naturalized production” (Darwin, 1996, p. 105). The genetic drive toward producing abundance and diversity is an inescapable part of our material genetic heritage. To represent ourselves as masters of our behaviors is to ignore the biological limits of our agency—and there *are* limits. Remember

⁶ Parts of this paragraph and the next two appear in slightly different form in my “Climate Change Narratives and the Need for Revisioning of Heritage, Knowledge, and Memory” (2015, 11–13).

⁷ Adam Trexler observes that Michael Beard’s relationships and behaviors “are overdetermined by an evolutionary drive to compete and dominate against members of the same species” (Trexler, 2015, p. 48). Beard’s character embodies excessive appetites, and in the novel, his character compulsively seeks to satisfy them.

Michael Beard. What is at issue here, then, is not only how we represent the natural environment but how we represent ourselves within that environment. Clearly, the role of the Humanities here is vital in addressing the issue of climate migrants.

In a 2012 article published in *BioScience*, Swedish environmental historian Sverker Sörlin posed the question, “What do the humanities have to do with the environment?” He noted that “our belief that science alone could deliver us from the planetary quagmire is long dead” (Sörlin, 2012, p. 788). The humanities are a necessary conduit for translating complex scientific narratives about anthropogenic climate change and the Anthropocene. Literature, mainstream media (such as CNN), Hollywood films, music: these are central to promoting environmental literacy and to bringing, as Glen Love put it, “the obscure biological discipline of ecology out of the field and the science lab and into public consciousness” (Love, 1999, p. 565). It is delusional to think that we can continue with business as usual. The hard realities of Anthropocene fantasies are upon us. There will be an environmentally-related exodus of biblical proportions, and another, and another, and these events will occur with increasing frequency. We know this, and we have always known this, from the time we first wrote the twenty-two chapters of *Revelation* through to our current obsession with the topic.⁸ The fight is a long, hard one that requires focus, a fight not with the environment but rather with the lies and the people who promulgate those lies. The fact that in 2017 Scott Pruitt, the then Head of the Environmental Protection Agency could claim that CO₂ does not cause climate change (and keep his job) tells us more than the simple fact that Mr. Pruitt answers to businesses and politicians who oppose sustainable industries; it tells us that there is a continued need for Bruno Latour to have to write about “telling friends from foes in the time of the Anthropocene” (see Latour 2015, p. 145) and for the Goulds and the Wilsons to theorize about bridging the great divide between the sciences and the humanities. What must grow out of all of this is recognition that unfettered growth is simply fantasizing.

The fantasy of limitless development and expansion has been growing for a long time. Human impacts on geology date back more than 12,000 years to the commencement of agriculture. The Anthropocene, in this sense, is not new; rather, it is staged. Following the early stage (agricultural) came what has been called “the Great Acceleration” (the first part of which began with the steam engine, the second with the development of our nuclear capacities); but as I explain throughout *The Ecophobia Hypothesis* (Routledge 2018), the origin of the Anthropocene itself rests in the collective human condition of ecophobia. The ecophobic condition exists on a spectrum and can embody fear, contempt, indifference, or lack of mindfulness (or some combination of these) towards the natural environment. The ecophobic condition has greatly serviced growth economies and ideological interests, but the realities are that there are limits to what we can take from the world.

There is an undeniable apocalyptic content in news media coverage about climate change, and Nature is the villain who causes humanity to suffer. Headlines about storms “lashing” this place or “pounding” that one show flat rejections of knowledge for responsibility of such events. We certainly have knowledge of the human hand in climate change (this is not the question), but news of weather disasters in particu-

⁸ For an excellent introductory discussion of the topic, see Andrew Tate’s *Apocalyptic Fiction*.

lar and climate change narratives in general broadcast an obscuring (a concealing, muddling, and confusing) of agency. No longer indicted as the cause, the human is freed of responsibility for the solution. Offered an epistemological alibi, humanity is relieved of its duty to the future, of its obligation to answer for itself, and of its very capacity to process knowledge. Recognition of the causal relationship should lead to knowledge, a point Amitav Ghosh eloquently makes (echoing Aristotle) in *The Great Derangement*: “Recognition is famously a passage from ignorance to knowledge” (Ghosh, 2017, p. 4). Producing and working with real and honest knowledge and facts is absolutely central to handling the global social migrations that we are facing and that we will increasingly face. Global warming is real, as are the migrations it produces.

As Lee McIntyre explains, while “there is virtually no scientific debate over the question of whether the global temperature is rising and humans are the primary cause of it, the public has been hoodwinked into thinking that there is a great scientific controversy over this issue” (McIntyre, 2018, p. 21). It is not the first time such a thing has happened. For decades, medical doctors (in the deep pockets of tobacco companies) were trumpeting the health benefits of cigarettes; Monsanto (with its deep pockets) has bamboozled the American public for years about the need for GMOs and the “Roundup” herbicide; and George W. Bush (with his deep-pocketed connections) convinced Americans that Iraq had weapons of mass destruction. To cite from McIntyre again, “when our leaders—or a plurality of our society—are in denial over basic facts, the consequences can be world shattering” (ibid., 10), as

when South African President Thabo Mbeki claimed that antiretroviral drugs were part of a Western plot and that garlic and lemon juice could be used to treat AIDS, and over 300,000 people died. [Similarly] when Mr. Trump maintains that climate change is a hoax invented by the Chinese government to ruin the American economy, the long-term consequences may be equally devastating, if not more so (ibid., p. 10).

.To engage with the so-called “Climate Change Debate” is to pander to post-truth thinking and to forget that “the goal of objectivity is not to give equal time to truth and falsehood—it is to facilitate truth” (ibid., p. 81). The truth is that we are facing changes of biblical proportions in the coming years, the roots of which are entrenched systems of social and environmental exploitation. To see climate migrants as threats to national security is the soft way of saying that climate migrants are a threat to the status quo—the entrenched systems of social and environmental exploitation that has caused and is furthering climate change. Border walls and withdrawals from climate pacts point away from reality. Climate and the environment are not our enemies, not our opponents; rather, it is an ethics of exploitation that have caused environmental crises and climate change that are the problem, and the transcultural migration of these ethics have only made things exponentially worse. Things could get very bad, and the Humanities have an important role in how we conceptualize migration due to climate change. These conceptualizations are critical to ensuring the well-being of the greatest number of people possible.

References

- Abrams, L. (2015). Global warming and global war. *Environmentalists against war*. www.envirosagainstar.org/know/read.php?itemid=16094
- Appiah, K. A. (2006). *Cosmopolitanism: Ethics in a world of strangers*. Norton.
- Barbut, M. (2017). A myriad of opportunities. In D. Ionesco, D. Mokhnacheva, & F. Gemenne (Eds.), *The atlas of environmental migration* (p. IX). Routledge.
- Cama, T. (2015). Obama: climate change 'serious threat to global security.' *The Hill*. <https://thehill.com/policy/energy-environment/242622-obama-climate-change-serious-threat-to-global-security>
- Darwin, C. (1996). [1859]. *The origin of species*. Oxford University Press.
- De Bruyn, B. (2020). The great displacement: Reading migration fiction at the end of the world. *Humanities*, 9(25), 1–16. <https://doi.org/10.3390/h9010025>.
- Denevan, W. M. (1992). *The native population of the Americas in 1492*. University of Wisconsin Press.
- Diamond, J. (1997). *Guns, germs and steel: The spread of humans around the world*. Norton.
- Diamond, J. (2005). Variables: The story of smallpox—and other deadly Eurasian germs. *PBS*. <https://www.pbs.org/gunsgermssteel/variables/index.html>
- Emmerich, R. (2009). 2012. Columbia Pictures.
- Estok, S. C. (2018). Climate change narratives and the need for revisioning of heritage, knowledge, and memory. *Cultura: International Journal of Philosophy of Culture and Axiology*, 15(1), 7–21.
- Estok, S. C. (2018). *The ecophobia hypothesis*. Routledge.
- Estok, S. C. (2022). Wang Ning and Shakespeare. *Interdisciplinary Studies of Literature*, 6(2), 256–271.
- Fountain, H. (2015). Researchers link syrian conflict to a drought made worse by climate change. *New York Times*. <https://www.nytimes.com/2015/03/03/science/earth/study-links-syria-conflict-to-drought-caused-by-climate-change.html>
- Ghosh, A. (2017). *The great derangement: Climate change and the unthinkable*. University of Chicago Press.
- Grosz, E. (2008). Darwin and feminism: Preliminary investigations for a possible alliance. In S. Alaimo, & S. Hekman (Eds.), *Material feminisms* (pp. 23–51). Indiana University Press.
- Hamid, M. (2017). *Exit West*. Riverhead.
- Holthaus, E. (2015). New study says climate change helped spark Syrian civil war. *SLATE*. <https://slate.com/technology/2015/03/study-climate-change-helped-spark-syrian-civil-war.html>
- IPCC (2018a). *Summary for policymakers of IPCC special report on global warming of 1.5°C approved by governments*. <https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/>
- IPCC Press Release (2018b). *Summary for policymakers of IPCC special report on global warming of 1.5°C approved by governments*. https://www.ipcc.ch/pdf/session48/pr_181008_P48_spm_en.pdf
- Ionesco, D., Mokhnacheva, D., & Gemenne, F. (2017). *The atlas of environmental migration*. Routledge.
- Jacobs, W. R. (1974). The tip of an iceberg: pre-Columbian Indian demography and some implications for revisionism. *The William and Mary Quarterly*, 3rd Ser., 31(1), 123–132.
- Latour, B. (2015). Telling friends from foes in the time of the Anthropocene. In C. Hamilton, C. Bonneuil, & F. Gemenne (Eds.), *The Anthropocene and the global environmental crisis: Rethinking modernity in a new epoch* (pp. 145–155). Routledge.
- Love, G. A. (1999). Ecocriticism and science: toward consilience? *New Literary History*, 30(3), 561–576.
- McEwan, I. (2010). *Solar*. Vintage.
- McIntyre, L. (2018). *Post-Truth*. MIT Press.
- Neville, A. (2013). Rights or riots? How we think about climate change migration. *Right now: human rights in Australia*. <https://rightnow.org.au/opinion/3/rights-or-riots-how-we-think-about-climate-change-migration/>
- Nixon, R. (2018). The Anthropocene: The promise and pitfalls of an epochal idea. In G. Mitman, M. Armiero, & R. S. Emmett (Eds.), *Future remains: A cabinet of curiosities for the Anthropocene* (pp. 1–18). University of Chicago Press.
- Oreskes, N., & Conway, E. M. (2014). *The collapse of western civilization: A view from the future*. Columbia University Press.
- Robinson, K. S. (2020). *The Ministry for the Future*. Orbit Books.
- Sörlin, S. (2012). Environmental humanities: why should biologists interested in the environment take the humanities seriously? *BioScience*, 62(9), 788–789.

- Strozier, C. & Berkell, K., (2014). How climate change helped ISIS. *HuffPost*. https://www.huffpost.com/entry/how-climate-change-helped_b_5903170
- Tate, A. (2017). *Apocalyptic fiction*. Bloomsbury.
- Trexler, A. (2015). *Anthropocene fictions: The novel in a time of climate change*. University of Virginia Press.
- Wheelis, M. (2002). Biological warfare at the 1346 siege of Caffa. *Emerging Infectious Diseases*, 8(9), 971–975.
- Worldometer (2021). Carbon Dioxide (CO₂) emissions per capita. <https://www.worldometers.info/co2-emissions/co2-emissions-per-capita/>

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