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Science Fiction and Utopia in the Anthropocene

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Abstract

This article takes up science-fictional visions of the future against the “deep time” of the Anthropocene in order to explore the possibilities for utopia that remain in an era that only seems capable of producing necrofuturological dread. The piece surveys a wide range of contemporary literature and film; the key prose authors discussed are Octavia E. Butler, Margaret Atwood, Ernest Callenbach, and Kim Stanley Robinson. These texts are used to identify patterns of thought that have become habitual in the cultural moment of the Anthropocene, and they are explored as critiques of, alternatives to, and lines of flight away from its more pessimistic ideological formations.

Keywords

Octavia E. Butler, Margaret Atwood, Ernest Callenbach, Kim Stanley Robinson, ecological humanities

It is still an open question whether man will be able to survive the exceedingly complex and unstable ecological conditions he has created for himself. If he fails in this task, interplanetary

archaeologists of the future will classify our planet as one on which a very long and very stable period of small-scale hunting and gathering was followed by an apparently instantaneous efflorescence of technology and society leading rapidly to extinction. ‘Stratigraphically,’ the origin of agriculture and thermonuclear destruction will appear as essentially simultaneous.

—Richard B. Lee and Irven DeVore, *Man the Hunter* (1969)

In *The Human Condition* (1958), Hannah Arendt (1998: 265) takes up the twentieth century’s development of a “cosmic standpoint outside nature itself,” which is tokened in her introduction by the Soviet Union’s 1957 launch of Sputnik. She argues that we now see ourselves through Sputnik’s eyes, an interplanetary, alienated gaze from nowhere rather than from the grounded, terrestrial standpoint that had constituted “the human condition” through all of human history (1–6). Arendt argues that such a universal cosmic standpoint—the Earth as viewed from space, a scale from which both human lives and human accomplishments are invisible—is a deep and abiding threat to “the human” as such: an obliteration both of humanity’s place in its material context and of humankind’s potential to undertake effective and meaningful action toward its own betterment (268). Here Arendt finds the real world playing catch-up to science fiction: “What is new is only that one of this country’s most respectable newspapers finally brought to its front page what up to then had been buried in the highly non-respectable literature of science fiction (to which, unfortunately, nobody yet has paid the attention it deserves as a vehicle of mass sentiments and mass desires)” (2); the writers and readers of science fiction, she suggests, had perfected this more cosmic way of thinking long before the Sputnik launch.

More recently, Ursula K. Heise has taken up this science-fictional, cosmic standpoint in a more positive register, noting the way that images of the Earth from space have helped to spur global environmental consciousness. The spatial separation of the viewer’s gaze from the planet—as in the 1968 *Earthrise* photograph taken by the Apollo 8 crew member William Anders, or the 1972 *The Blue Marble* snapped by the Apollo 17 crew, or even the *Pale Blue Dot* taken by *Voyager 1* in 1990, in which a six-billion-kilometer-distant Earth is but a single pixel, barely visible against a field of total darkness—represents the Earth as an immediately graspable totality, in which all differences between race, class, gender, nation, ideology, and ecosystem have been completely smoothed away in favor of a new, cosmopolitan universality. “Set against a black background like a precious jewel in a case of velvet,” Heise (2008: 22) writes of *The Blue Marble*, “the planet here appears as a single entity, united, limited, and delicately beautiful.” Here, too, of course, science fiction was first; science fiction had imagined the Earth as viewed from space from practically the moment it was first recognizable as a genre, in such still-famous works as Jules Verne’s *Around the Moon* (1870) and H. G. Wells’s *The War of the Worlds* (1898).

The central argument of this article is that contemporary thought is currently undergoing a conceptual dislocation much like the one Arendt and Heise identify, similarly conversant in cutting-edge science and similarly conditioned by the science-fictional imagination. The central division between that cosmic standpoint and our own is that the flattening power of contemporary universalism is predicated on temporal rather than spatial separation from the scale of human life: rather than the view of the Earth from the standpoint of *deep space*, ours is a view of the present from the standpoint of *deep time*. This is ultimately the view from a radically posthuman (and antihuman) future in which the

human race has entirely disappeared. This standpoint, the one scientists and ecological humanists have popularly dubbed the Anthropocene, thereby registers a radical hollowing-out of the utopian potential of futurity—nicely befitting, perhaps, a cultural moment in which not only “the end of history” (Fukuyama 1989) but also the near-term imminence of human extinction increasingly seems to be a matter of scientific certainty.

If Arendt was surprised to find science fiction coming to terms with the onrush of the future faster and more fully than the more respected mainstream commenters of her day, we should not be. By now, I think, we critics understand science fiction’s social role as a site for attempting to predict, premeditate, resist, and even control the future. In this article, I consider recent developments in literary science fiction and utopian thought in the face of the Anthropocene, and I explore the ways in which the energizing potentiality of science fiction’s famous “utopian impulse” (see Jameson 2005, especially 2–4) might yet be recovered out of a world-historical system whose coordinates now seem not just anti-utopian but out-and-out apocalyptic—indeed, as an event which we have become so habituated toward that we imagine it as a catastrophe that has already happened, against which no point of political resistance seems imaginable.

My approach is both taxonomic and critical; I want to identify patterns of thought that have become habitual in the cultural moment of the Anthropocene as well as critiques of, alternatives to, and lines of flight away from these ideological structures. As we will see in the next section, a core problematic for thinking about the Anthropocene has been the question of universalism, the notion of a single human species operating along a linear narrative of social and technological progress that culminates in political liberalism and twentieth-century/twenty-first-century technoculture. The Anthropocene, as it is commonly formulated, both affirms and denies this incredibly flattened understanding of planetary history, in different ways; within this theoretical paradigm we can thus find both the ossification of toxic Eurocentric and white-supremacist ideologies as well as the possibility that new ways of understanding the human species, its history, and its relationship with other forms of life might emerge from this moment of collective crisis. In this way, the very idea of “the Anthropocene” might be best understood as itself a space of science-fictional imagination, which, like any science fiction, articulates a space of world-historical difference to either confirm or challenge the political-cultural assumptions of the society that produced it (indeed, if not doing both at the same time).

I begin by articulating the theoretical paradigm of the Anthropocene as it has gained currency in the contemporary academy and exploring some of its philosophical corollaries that have gone underdiscussed and overlooked. I then turn to Anthropocenic ways of thinking in several influential works of contemporary science fiction, especially paradigmatic work by Margaret Atwood and Octavia E. Butler, to demonstrate how ideas now associated with the Anthropocene (even when that term goes unrecognized or unnamed) have infused the futurological narratives our society now produces. In Part Two, I lay out major utopian and quasi-utopian strategies to resist the cosmic pessimism of the Anthropocene in order to explain how science fiction has attempted to imagine hopeful possibilities for a future that now seems preemptively and permanently foreclosed, not simply by political failure or by human frailty but by scientific law. This is intended as a broad overview of the field rather than as a deep critical dive into any particular work; the ambition of this piece is to use science fiction as a tool to help us better read and understand the modalities of the Anthropocene itself.

Part One: Welcome to the Anthropocene

Geologists, climatologists, evolutionary biologists, and other scientists who study what John McPhee dubbed the “deep time” of planetary history use a geologic time scale to periodize the immense four-billion-year history of Earth as it appears to us through rock stratigraphy and the fossil record. The largest unit, the *eon*, can span an incomprehensible billions of years; eons are then progressively subdivided into *eras*, *periods*, *epochs*, and *ages*, the last still numbering in the millions of years. These divisions tend to be organized around superhistorical ruptures: the first emergence of life approximately four billion years ago, for instance, marks the boundary between the lifeless Hadean eon and the Archean eon populated by single-celled organisms, while the mass extinction event that killed the dinosaurs punctuates the end of the Cretaceous period at the close of the Mesozoic era, inaugurating the Cenozoic era in which human life evolved. Our species took its present form in the Pleistocene epoch, which began approximately two and a half million years ago and ended (just) eleven thousand years ago; the current geological epoch is the Holocene, dated to the retreat of the glaciers at the end of the last ice age.

To think at such scales is to radically decenter the white, European subject that once so easily imagined itself to be identical with both “history” and “the human.” As the epigraph from Lee and DeVore attests, from the perspective of geologic time the human species as a whole exists only in a sliver of a sliver of the most recent flash of time, with the recorded history of “civilization” encompassing an even smaller instantaneous moment still. Rather than being the sacred heirs of the universe, beloved by God, *Homo sapiens* becomes recast instead as but its most recent epiphenomenon, as miniscule in the immensity of geologic time as Earth itself is with respect to the hundreds of millions of stars in the universe. Geologic time can thus be seen as the culmination of the cosmic decentering that began with Copernicus’s proof that the Earth revolves around the sun and not the other way around; the more we learn about the size of the universe, the less significant the time and space taken up by the human species appear. In the twentieth and twenty-first centuries, decolonization movements and postcolonial thinking have similarly worked to “provincialize Europe,” in Dipesh Chakrabarty’s (2000) famous phrase, fragmenting the white fantasy of a universal human subject and teleological human progress into nonlinear, multi-subject narratives that cannot privilege either whiteness or Europe; we might be tempted to say that geologic time provincializes the human, or even the Earth as such, radically decentering the historical moment called modernity and revealing it to have no particular cosmic importance whatsoever.

But recent propositions in geologic thinking have suggested a philosophical countermove that reintroduces humanity as a collective actor who can be recognized on this kind of immense geological scale after all. Paul J. Crutzen’s influential *Nature* article “The Geology of Mankind” (2002) proposed that the Holocene can now be said to have ended, superseded by the epoch he calls “the Anthropocene” (23). The Anthropocene marks the moment that the activities of the human species become visible in the geologic record: the moment that the logic of Copernican decentering is reversed and we become geologic actors after all. *Homo sapiens* evolved in the Pleistocene and gained its tremendous technological powers in the Holocene—but with the full realization of those powers toward total world-transformation we are now in the Anthropocene. While the Anthropocene of course remains a contentious taxonomic category, the concept has been embraced by many scientists,

with such bodies as the Geological Society of London taking steps toward formal recognition of the Anthropocene as an official geologic epoch (see Zalasiewicz et al. 2008)—and despite its informal status the terminology already possesses a tremendous amount of currency, particularly for scholars working in the ecological humanities.

Crutzen's (2002: 23) article suggests the Industrial Revolution of the late nineteenth century as the beginning of the Anthropocene, "when analyses of air trapped in polar ice showed the beginning of growing global concentrations of carbon dioxide and methane" as a result of human burning of fossil fuels. Another proposed date is 1945, when the beginning of the atomic age left radiological evidence of our existence that will last for millennia (see Zalasiewicz et al. 2010), or perhaps later still in the twentieth century, when the widespread use of materials like plastic, glass, and Styrofoam in consumer objects created a stratigraphic layer of detritus and trash that will never break down. Still others have argued that the date of the Anthropocene should be much earlier, decoupled from modern technoculture and perhaps almost completely coterminous with the Holocene itself, on the basis that such prehistorical events as the mass extinction of megafauna in the North American continent and the complex forestry practices of precontact Native Americans will by themselves be recognizable to future observers as the handiwork of an intelligent species (as in Doughty, Wolf, and Field 2010). A 2015 article in *Nature* suggests an unhappier middle option: circa 1492, when the first contact between Europe and America and the consequent death of tens of millions of Native Americans led to reforestation across the Western Hemisphere, which, a century later, may have caused the significant dip in global temperatures often dubbed the "Little Ice Age" (Lewis and Maslin 2015).

The psychic benefit of the Anthropocene as a concept is an unexpected reversal of the deflationary logic of the Copernican and Darwinian Revolutions in thought: the Anthropocene and all its attendant ecological crises—climate change, mass extinction, ocean acidification, all the rest—is the "proof" that we as a species are not in fact insignificant but are instead the most important superhistorical force currently on the planet. For the white European subject, missing perhaps his old status as the protagonist of species history, the Anthropocene could be seen to "undo" the provincialization of Europe and uncritically recenter modernity, a flattening Chakrabarty (2009: 219–20) himself has noted as a possible risk of thinking climate change from the perspective of the postcolonial: "How do we relate to a universal history of life—to universal thought, that is—while retaining what is of obvious value in our postcolonial suspicion of the universal?" Properly thinking the Anthropocene requires one to hold universality and locality in permanent dialectical suspension around this contested notion of a human species that both is and is not identical with contemporary global capitalism.

But news of the Anthropocene, while from a certain perspective a perversely comforting reassertion of humanity's cosmic importance, also carries with it some steep philosophical costs. First, the version of human superhistorical activity it foregrounds is almost exclusively a negative one: to the extent that human activity is visible in the fossil or stratigraphic records, it is through destructive anti-ecological acts of mass pollution and mass extinction. It is for this reason that Jason W. Moore (2017) has proposed the alternative name Capitalocene for the Anthropocene, both to highlight *what* is to blame (a particular system of social organization, using particularly toxic sources of energy and producing particularly permanent types of goods) and *who* is to blame (the rich Western nations, which have inflicted ecological degradation upon the rest of humanity without even allowing them to share in

what now seems like a very temporary period of extreme wealth). Donna J. Haraway (2016) goes further still, offering the name “Chthulucene” to describe the world Capital is creating: monstrosity on an unthinkably large scale.¹ As Chakrabarty (2009: 222) goes on to note in his own dialectical consideration of the interplay between universality and locality, the sense of universalism that emerges from climate change is “a universal that arises from a shared sense of a catastrophe” that cannot be allowed to “subsume particularities”—i.e., cannot allow us to return to naive white universalism or to let capital off the hook for what it has done. It must be a “negative universal history.”

Additionally—and perhaps worse still for any human-centered analysis of the concept—the Anthropocene implies *posthuman time*; the Anthropocene is not simply the moment that we recognize ourselves in the fossil record but the moment that *other* observers, looking backward from many thousands or millions of years in the future, would be able to “see” us as well, without having already known we were here. In this sense the Anthropocene is worse than a view from nowhere; it is a view from the standpoint of human extinction. Needless to say, this is if anything an even more radical provincialization of the present than we started with! To say “the Anthropocene” is in some sense to name ourselves and our society as all already dead.

I would thus suggest the assertion of the Anthropocene as a kind of neo-Romantic revival of the melancholic fascination with death, illness and morbidity, ruin, and a vanishing natural world that characterized so much Anglo-American literature (especially poetry) in the nineteenth century. The Anthropocene is in fact the perfection of the Romantic way of thinking, allowing us access to a version of the temporal sublime that goes beyond any Grecian urn, ruined monastery, or shattered colossus in the desert—and, like the Romantics’ use of the sublime, the assertion of the Anthropocene seeks to re-inject an appreciation for the sacredness of life into a world that seems to have entirely crushed such valuation. However, the shock of the sublime in the Anthropocene has a somewhat different affect than the one Romantic poetry activates: rather than seeing ourselves as divine, or a necessary and organic part of a holistic tapestry of life, cultural production in the Anthropocene tends to figure the human as a cancerous *deviation* from a unifying natural order—the nightmare kings of a horrid empire of plastic trash and toxic poisons.

In this way the Anthropocene can be best understood not as a break with universalist history at all but rather as its final violent extension even to the white, metropolitan subjects who once believed themselves to be safely immune to its horrors. This is the core of Kathryn Yusoff’s critique of the concept of the Anthropocene as it has been advanced in the academy, in her call for its decolonization:

If the Anthropocene proclaims a sudden concern with exposures of environmental harm to white liberal communities, it does so in the wake of histories in which these harms have been knowingly exported to black and brown communities under the rubric of civilization, progress, modernization, and capitalism. The Anthropocene might be seen to offer a dystopic future that laments the end of the world, but imperialism and settler colonialism have been ending worlds for as long as they have been in existence. The Anthropocene as a politically infused geology and scientific/popular discourse is just now noticing the extinction it has chosen to continually overlook in the making of its modernity and freedom. (Yusoff 2018: xii)

The “racial blindness” of the Anthropocene as a concept, Yusoff (2018: xii) argues, does more harm than good if it cannot come to terms with imperialist and white settler history—hence her call for a *A Billion Black Anthropocenes or None*.

The depressive logical consequences of embracing the Anthropocene as a framing for understanding our time can be seen clearly in Margaret Atwood’s recent flash fiction “Time Capsule Found on the Dead Planet,” published in *The Guardian* on the occasion of the Copenhagen climate conference in 2009. Atwood’s very short story traces a history of human beings—imagined, *contra* Yusoff’s warning, as a singular “we”—that undercuts both the familiar rhetoric of inevitable historical progress and science-fictional discourses of interstellar colonization. From the first age, in which we “created gods” and during which “a million birds flew over us . . . a million fish swam in our seas,” the human story is recast instead as a narrative of degeneration and mass death. In the second age “we created money”; in the third age “money became a god” that “began to eat things. It ate whole forests, croplands and the lives of children. It ate armies, ships and cities. No one could stop it. To have it was a sign of grace.” Finally the age of the money god creates the fourth age, our time, the Anthropocene, in which human creative potential can only be turned toward the production of death: “In the fourth age we created deserts. . . . At last all wells were poisoned, all rivers ran with filth, all seas were dead; there was no land left to grow food.”

And so the fifth age is an age of total silence. The address of the short turns from “we” to “you,” as “we” have all died. “You who have come here from some distant world, to this dry lakeshore and this cairn, and to this cylinder of brass, in which on the last day of all our recorded days I place our final words.” These unknown and unknowable aliens are the full and final gaze of the Anthropocene, discovering in the Earth a world that has been ruined by human activity. These aliens have achieved the dream of science fiction that the twentieth century placed so much imaginative investment in: they have ascended from their home world and accessed the full wonders of the cosmos. But humans didn’t. Those last words, inscribed on the capsule, are a bitter rebuke to a civilization that fantasized about progress but was able to produce only death: “Pray for us, who once, too, thought we could fly.”

Parables of the Anthropocene

A similar deconstruction of the Star Trekian “consensus future”² of social and technological progress culminating in interstellar colonization can be found in Octavia E. Butler’s *Parable of the Sower*, an influential Afrofuturist novel that attempts to wed utopian thinking with the bleak near-term prospects for the planetary ecosystem, global capitalism, and US civic institutions. The two novels in the Parables series are Butler’s most predictive works of science fiction; Butler (1998a) says she wrote them in the speculative spirit of Robert A. Heinlein’s famous “if this goes on.” (“And if it’s true,” she adds, “if it’s anywhere near true, we’re all in trouble.”) The situation of the novels is a slow-motion apocalypse that, early in the second book, is called “the Pox”—global warming, economic depression, and neoliberalism’s accelerative hollowing-out of the public sphere have conspired to leave America in a state of near-total collapse (Butler 1998b: 8–9).³ The chaotic, multidirectional violence of American empire has encroached from the margins closer and closer toward the metropole; as the first novel (*Parable of the Sower*) opens, heavily armed, once-suburban gated communities offer the only refuge from the disastrous decline of late capitalism—and as the novel begins even these havens are beginning to be breached. The protagonist of the Parables is Lauren Olamina, a young, disabled Black

woman living in one of these privileged enclaves, who suffers from a psychological disease that causes her to experience other people's pleasures and pains. But this empathic weakness is simultaneously her strength—it opens up the possibility of new and genuine ethics, and of a better world than this one. Over the course of *Sower*, Lauren Olamina—driven from her home into the ruined highways of America following the raiding and burning of her home suburb by “pyros”—develops and begins to evangelize a new religion called Earthseed, which attempts to foster livable lives in this fallen world and insists that both “Life is Change” and “God Is Change” (Butler 1993: 3). The religion takes its name from a redemptive belief in that oldest and most cherished of science-fictional dreams, the colonization of the stars (74–75; “The Destiny of Earthseed / is to take root among the stars”). Earthseed is constituted by a Darwinian recognition of the eternal flux of life as well as a *post*-Darwinian attempt to seize control of that flux and put it toward human ends, first and foremost the longevity of the species.

The stars provide us a number of things that Lauren (and, judging from her interviews around *Sower*, Butler herself) thinks we need. The stars guarantee us safety from any local disaster. A humanity spread across many worlds is free from the extinction threat of rogue asteroids, or nuclear war, or superdisease, or supervolcanos, or climate change, or anything else you could name—a human species spread safely across many worlds could perhaps survive as long as the universe itself. Earthseed both exceeds and subverts the Anthropocene by turning human beings into *galactic* actors, not limited to any one planet's history or ecology. Additionally, the struggle involved in the flight to the stars—the struggle to build the spaceships in the first place, the struggle to get there, the struggle to adapt the new environment to our needs, the struggle to adapt ourselves to the new environment—will spur humanity's growth as a species and prevent us from exploiting, raping, killing, and otherwise immiserating each other in the meantime (as Butler misanthropically believes we will do, in the absence of some larger common purpose).⁴ While somewhat pessimistic in its assumptions, and inflected by an Anthropocenic fear of the possibility of human extinction, the Parables series can be seen from one perspective to be in line with the utopian optimism of much twentieth-century science fiction, which by and large took the eventual emergence of a human-centered civilization in outer space as a foundational assumption (as in that paradigmatic liberal cosmopolitan future, *Star Trek*).

But *Sower* is filled with paradoxical indications that its protagonist's vision may be fundamentally flawed that would be much more at home with a resistant thinker of the Anthropocene like Yusoff, beginning with its opening pages. The opening sequence of *Sower* describes a recurring dream in which Lauren is learning to fly, but she becomes trapped in a burning house before she is able to master it, ultimately succumbing to the flames (Butler 1993: 4). This is a barely sublimated version of the conflict that drives political debate in both books in the series: first, can you get off the planet before humanity destroys it (through war or climate change or stupidity or anything else), and, second, *should* you get off the planet before humanity destroys it, that is, should your ambition be to escape in a tiny utopian enclave called the Earthseed rocket while the rest of humanity burns and chokes and starves and dies? What looks from one angle like a species destiny looks from another like the destiny of a tiny, privileged few that considers itself the whole species, or at least the only part of the species that really matters.

This problem, an undercurrent throughout *Sower*, becomes totally inescapable for us when we get to *Parable of the Talents*, which functions as a deconstruction of the commitments of the first novel. Characters in both books, but especially in *Talents*, repeatedly demand from Lauren an answer as to how she can possibly justify any expenditure on a blue-sky project like Earthseed when the entire planet is in ruins and everything is getting worse. The second book hits us over the head with this problem, over and over again—why, Lauren’s daughter asks, can she not see her dreams of a heaven in outer space are “pathetically unreal” (Butler 1998b: 150)? “The Earthseed Destiny,” another character denounces, “is an airy nothing. The country is bleeding to death in poverty, slavery, chaos, and sin. This is the time for us to work for our salvation, not to divert our attention to fantasy explorations of extrasolar worlds” (170). Her own husband cannot tolerate Lauren’s “immaturity, my irrational, unrealistic faith in Earthseed, my selfishness, my shortsightedness” (145). There are dozens of incidents like this across the text, and none of them is ever really answered. In fact, Lauren’s daughter, the bitter narrator of the text who is gathering all these voices together, agrees wholeheartedly with her mother’s detractors.

It is common of course for narratives to contain antagonists, even strong and convincing antagonists, for the protagonists to overcome. But the events of *Talents* leave us with the impression that these antagonists have a compelling case that Lauren has simply not refuted convincingly. Even in the moment of Lauren’s triumph, there is an inescapable sense that Earthseed has turned its back on something that is also vital, that the realization of the Earthseed destiny entails the retreat from the real-world political effort to make people’s lives better (even while little in the novel suggests real-world struggle might be effective in averting continued disaster). There is thus no real, collective future for humanity in either direction.⁵ I would suggest the final refusal of the novel to allow Lauren’s proposed new human universal to “subsume particularities” or to remain silent on the unequal distribution of the violence of the Anthropocene—to overlook the suffering of the raced, classed, gendered, and (dis)abled bodies who are capital’s victims—is part and parcel of Butler’s Afrofuturist intervention in science fiction, which cannot allow the utopian progress narrative called “colonialism” to go unchallenged, even at the cost of making a character Butler intensely personally identified with quite unhappy, and even at the cost of ruining the futurological space-colonialist fantasy she had enjoyed as a lifelong fan of American science fiction (and of *Star Trek* in particular).

At the end of the novel, Lauren’s last journal entries read as an exercise in convincing *herself* that she has done the right thing and lived the right kind of life. Her last journal entry in the main time period of the novel (2035) has her giving up on any purpose but the Destiny, including finding her kidnapped daughter: “I’ve always known that sharing Earthseed was my only purpose” (Butler 1998b: 430–1). Then the narrative jumps forward sixty years, to the launch of the first Earthseed ship, conveniently skipping over the years in which Lauren toiled endlessly to make this happen. Her last journal entry (dated July 20, 2081) both begins and ends with her assertion that “I know what I’ve done”—an assertion of pride that concedes a nagging doubt. The ship, with its crew in cryogenic hibernation, is leaving Earth for a distant star, never to return; it has left human history (on all scales, from individual life to the lives of societies and nations to the geological Anthropocene in all its yawning totalizing), for something else that no one left behind will ever know. Even the name of the spaceship rings a sour note: against Lauren’s wishes the ship has been christened the *Christopher Columbus*, suggesting that

the Earthseeders aren't escaping the nightmare of history but are bringing it with them instead—not solving the problem, but simply starting the Capitalocene all over again somewhere else (444–6).

The Fermi Paradox and the Great Filter

That Butler was never able to complete the novels that would have followed *Talents*, beginning with her much-anticipated *Parable of the Trickster*, suggests that the consensus future of interstellar colonization may no longer be cognizable to us in concrete terms, or as anything but pure fantasy. Despite its prevalence in NASA's branding and self-promotion, manned space flight is no longer a priority for the organization; the missions to the moon stalled after only a few years, and the anticipated follow-up missions to Mars, the asteroid belt, and beyond have remained only dreams. Current plans for manned space missions to Mars, only fragmentary, typically describe one-way trips—hardly the stuff of an intergalactic "Federation" or space empire—and very rarely entail anything like a rational cost-benefit analysis in terms of what we back on Earth might get out of such projects. Travel *beyond* the solar system, as so commonly depicted in 1950s and 1960s science fiction, has become almost unthinkable in the years since the ecological turn of the 1970s; as Kim Stanley Robinson (2012: 328) writes in his recent *2312*: "Sorry, but it's true . . . the stars exist beyond human time, beyond human reach. We live in this little pearl of warmth surrounding our star; outside it lies a vastness beyond comprehension. The solar system is our one and only home." Human history is earthbound—and so Earthseed's ambition to conquer the stars (and its myriad echoes across the history of science fiction) is in the end as much the *nullification* of the possibility of historical change as it is any type of realization of it. We live on the Earth; if there's any change, it's got to happen down here, not out there.

However, within the white settler logic of progress, which assumes perpetual growth fueled by permanent expansion and endless resource extraction, a terrestrial-bound species can appear just as much a nullification of history as an intergalactic one. For humanity to flicker and die on Earth, and to leave no trace of itself save its garbage and the geological echo of incomprehensible mass extinction, reads to many as a crime against the specialness of our species (not to mention all the other species we've made extinct just to get this far). As H. G. Wells's characters put it at the end of his script for *Things to Come* (dir. William Cameron Menzies, 1936): "Conquest beyond conquest. . . . all the depths of space and all the mysteries of time . . . all the universe or nothing." The burning need for species immortality through interstellar colonization, to "annex the planets," as British imperialist Cecil Rhodes so famously dreamed (quoted in Csicsery-Ronay 2003: 234)⁶ is so naturalized that it has even become a research problem in speculative science. Enrico Fermi's famous articulation of the so-called Fermi Paradox—*where is everybody?*—remains unsolved. Given our assumptions about the age of the universe, the likely prevalence of life in the universe, the likelihood of an intelligent species like human beings evolving on a vital world, and the ease with which even a single intelligent species could "colonize" the entire galaxy (if only using self-replicating drones), why do we appear to be alone?⁷ Why haven't the aliens shown up, or, rather, why haven't they been here all along? What explains the "Great Silence" of the stars? The answer must be somewhere in our assumptions—and the most likely answer, according to many who read the problem, is that some blockage must inevitably intervene before species achieve their "destiny" in the stars. This "Great Filter" (Hanson 1998) might be located in humanity's evolutionary past—making us the first possible inheritors of the galaxy—but there is no particular reason to think this is the case. And, if it lies in our future, then within the logic of the Fermi

Paradox some sort of near-term catastrophe seems inevitable—a sense of impending doom that not only accords with every indication from the scientific community but is also strongly reinforced by mass-culture ideological messaging about the imminence of nuclear war that dates back to the 1940s. One “solution” to the Fermi Paradox thus universalizes our society’s sense of crisis as a law of civilization as such: civilizations all eventually destroy themselves, and so our time must be coming any day.

The Anthropocene/Capitalocene is, therefore, the realization that humans are causing the disaster of their own extinction through the very technological innovations that seemed, for a time, like they were going to save us from this fate. Oil capitalism is revealed as, in fact, an unthinkable disaster, the “resource curse” that plagues oil-rich nations enlarged to a planetary scale. Technoculture, in Lauren Berlant’s (2011: 1) well-known terminology, becomes a cruel optimism: “A relation of cruel optimism exists when something you desire is actually an obstacle to your flourishing.” Here the attachment is to that “consensus future” of ever-increasing social and technological progress, which has been linked historically to carbon-based energy resources that are both known to be running out and, at the same time, dangerously destabilizing the climate.⁸ Because we now face a problem so immense, so intricate, and so massively distributed in time and space that there seems nowhere we could begin to unravel it (even if we had the political will to do it, which we don’t) the future seems to us now like a series of ever-escalating, near-term disasters threatening not only our individual lives but the existence of the species as such. This “all-in” character of climate change (and its associated crises like ocean acidification, ongoing mass extinction, food shortage, and massive drought) is such a radical destabilization of the usual stakes of politics and history as we have experienced them that it reveals itself to us, when we allow ourselves to think of it at all, as a sublime terror. Hence the popularity in our time of zombie worlds, what I have elsewhere called *necrofutures* (Canavan 2014): anticipatory premeditations of a coming collapse that range from the immensely popular comic and television series *The Walking Dead* to Cormac McCarthy’s Pulitzer Prize–winning *The Road* (2006) to Alfonso Cuarón’s *Children of Men* (2006), Wanuri Kahiu’s *Pumzi* (2010), Christopher Nolan’s *Interstellar* (2014), and Bong Joon Ho’s *Snowpiercer* (2014), to Suzanne Collins’s young-adult trilogy *The Hunger Games*, to *Avengers: Infinity War* (2018), and even to children’s films like *WALL-E* (2008), *9* (2009), *Frozen* (2013), and *Moana* (2016) (and on and on). Trapped within a cruelly optimistic attachment to a consensus future of interstellar freedom that no longer seems viable, the only remaining alternative seems like a world of abject misery, trending toward inevitable and universal death.

Part Two: Anthropocene Utopias

Where then does the idea of utopia persist in the neo-Romantic melancholy of the Anthropocene, an era where the extinction and disappearance of human beings now seems so inevitable, and has been so thoroughly rehearsed, as to be a catastrophe that has already happened? How does one imagine utopia when both the collapse and the continuation of the present conditions of society seem like equally horrific *necrofutures*? One response has surely been a retreat into pure fantasy: the recasting of the ecological crisis into fantastic monsters in such films as *Pacific Rim* (2013) and the recent *Godzilla* reboots (2014, 2019). In such films we have a phenomenon that arises out of the ocean—relics of an earlier, hotter age, or creatures born in the intense heat of some hellish alternative

dimension—to threaten coastal cities: a plain allegory for rising sea levels. And the threat is explicitly our extinction; the stirring call to arms from Idris Elba’s character in *Pacific Rim*, echoed in the viral art that promoted the film before its release, is the heroic announcement that we are in fact “cancelling the apocalypse.” Utopian and anti-utopian frames stack uncomfortably in such escapist works. First, there is the utopian kernel: the fantasy at the heart of *Pacific Rim* is the dream-wish that climate change could be transformed into something we could *literally* fight. Much of the film luxuriates in this fantasy, from the construction of the giant Jaeger robots used to fight the kaiju monsters, to the repeated scenes of battle in which they slug it out, to the scenes of wartime collectively, solidarity, and human cooperation that occur both within and between the violence. (The central trope of the film, after all, is the neural collection that allows people to work in perfect synthesis for a common goal, without all those messy debates and competing interests.) If the threat of climate change were an alien invasion, we could just build weapons and armies to fight it, and maybe we could win. That utopian vision is matched immediately by the anti-utopian realization that in fact *this is the only type of problem our political institutions know how to solve*. Despite nominal calls to cut government spending, neoliberal governments, most especially that of the United States, seem to have endless resources for the military, for police, for jails, and for violence. We have an established system for developing and constructing superweapons; in fact Congress frequently insists that the military invent and mass-produce new weapons even when the Pentagon itself says it doesn’t want them. The security state is a ripe site for very lucrative investment, as well as a means by which existing relations of inequality are secured. But there is no such leverage point against an immaterial, inhuman, and geologically sublime problem like climate change, whose solution entails the end of capitalism itself; rather, climate change requires such a multitude of changes on every level of our society, all requiring massive government intervention in the market of the sort neoliberalism tells us is simply inconceivable, that we have nowhere to begin and no political will to try. Thus, even “happy crisis” figurations of climate change like *Pacific Rim* collapse in the end into cosmic pessimism, as we realize that the dream logic of the fantasy solution has no analogue in reality.

Another recurrent vision of utopia, which also unravels as a political project, might be called *the utopia of the animals*: Quiet Earth stories where human beings deliberately exterminate themselves in order to save the rest of the planet from destruction. “The Last Flight of Dr. Ain,” by Alice Sheldon (writing as James Tiptree, Jr.), from 1969, is an early example of the form; more recent examples include the film *Twelve Monkeys* (1995) and the titular first book in Margaret Atwood’s *Oryx and Crake* series (2003), both of which also see scientists deliberately releasing superviruses in the name of killing off humanity before it has permanently destroyed the environment. As Christina Alt (2015) has noted, in Wells’s fiction the extinction of other animals was taken as a marker of the future’s utopian potential, a token of humanity coming into its full powers as ruler of the planet, a logic that has recurred across twentieth and twenty-first century attempts to eradicate undesired pests. In the Anthropocene, however, this logic is now reversed; it is we who are the planetary disease that needs to be removed in order for life to continue. Ramin Bahrani’s short film “Plastic Bag” (2009), narrated in the wonderfully melancholic register of Werner Herzog as the interior voice of the bag, is a particularly evocative example of this kind of fantasy. The plastic bag is acquired at a typical late capitalist superstore (a Walmart, perhaps) to carry the customer’s goods home; used briefly to carry food to and from work and tennis practice, the bag is ultimately used to pick up a dog’s excrement, discarded into the trash,

and taken to a landfill. But the bag is immortal, as the plastic it is made of will never disintegrate—and so the film takes us on a million-year tour of the Anthropocene following the total disappearance of human beings, as the bag is blown by the wind through a now-empty Earth before ultimately coming to rest in the Great Pacific Garbage Patch. The bag, initially horrified by animal life, eventually comes to value animals more than even itself—and so in the film’s stunning final moments the bag calls back through time to its creators in the name of its own negation, saying “I wish you had created me so I could die.” In such texts as these the neo-Romanticism of our moment reigns supreme, producing a depressive utopian vision of a particularly antihumanist sort; our recognition of the sacredness of animal life and our guilt over mass extinction lead to an anguished desire for collective suicide, as the only way to stop “us” from killing again and again and again and again.⁹

Two related subgenres of utopian speculation offer us a way out of this seemingly hopeless impasse. The first is another twenty-first-century recast of a familiar science-fictional novum, this time the fantasy of the transformed posthuman. The sequels to Atwood’s *Oryx and Crake* (*The Year of the Flood* [2009] and *MaddAddam* [2013]) ultimately take such a tack. In the original *Oryx and Crake* the mad scientist Crake eliminated humanity via a supervirus in the name of preserving the planetary future. He allowed only a tiny reserve of humans to continue in the form of his “Crakers,” creatures who had been genetically engineered to live in only ecologically sustainable ways and to never overrun their niche. The Crakers are so limited and uncreative, so bound up in the animalistic instincts Crake has programmed into them, that they at first seem totally alien, even inhuman—and it is only as we discover that Crake has effectively failed in his mission to engineer out the spark of human creativity that they begin to seem like worthy successors to humanity. In the sequels, the overarching pessimism of the first novel is dulled by positing the possibility of a union between a small number of old-style humans who survived the plague and the Crakers, offering a new direction for the future beyond the ceaseless, self-defeating accumulation of the Capitalocene. In *MaddAddam*, a third utopian term is added: the pigoons (pigs spliced with human and baboon DNA that unexpectedly possess the ability to communicate with the Crakers telepathically), a form of animal life given voice and able to advocate for itself directly—calling not for our deaths, as with the utopia of the animals, but for our cooperation, and for an ethics of mutual care.

A parallel fantasy, albeit one retaining a somewhat more Mephistophelean edge, occurs at the end of Paolo Bacigalupi’s *The Windup Girl* (2009). *The Windup Girl* is a post-peak-oil novel; the world has been destroyed by climate change, the loss of fossil fuels, and the loss of agricultural diversity abetted by genetically modified foods, leading to a long period of crisis. The novel depicts an attempt to jumpstart the resumption of global capitalism by Western agricultural corporations looking to raid Thailand’s “food bank,” a narrative that only ends in yet another apocalyptic vision, the flooding of Bangkok. But the epilogue of the novel points us in a different direction. Emiko, the “Windup Girl” of the title, is another genetically engineered human—here, a sex slave. But the destruction of Bangkok opens up new space in which New People like Emiko might thrive, abetted by the book’s own Crake-like mad scientist, Gibbons. And like the Crakers, the New People can live in the broken, disease-ridden world that the humans have created, when even we cannot; the animal traits spliced into their genome make them faster, smarter, more observant, more disease resistant, even more loyal: “Someday, perhaps, all people will be New People and you will look back on us as we now look back at the poor Neanderthals” (Bacigalupi 2009: 358). Having produced in Emiko a complex and nuanced character who

simultaneously critiques and reproduces the exoticized, eroticized figure of an alluring Asian Other, the book's ambiguous prophecy can thus be read as both promise and threat to its assumed Western reader—simultaneously a vision of liberation and of extermination.

In my longer reading of Atwood's Oryx and Crake series I make reference to the famous Franz Kafka quote that comes down to us by way of Walter Benjamin (1969: 116): "there is plenty of hope, infinite hope, but not for us."¹⁰ We might recast this proverb as an opportunity rather than a curse: there *is* hope for us, so long as we become something other than the "us" we are now. Visions of posthuman ecotopias like the ones imagined by Atwood and Bacigalupi—or elsewhere in science fiction, as in the modified humans in the ecotopian future of Marge Piercy's *Woman on the Edge of Time* (1976) or the all-female clones of Tiptree's "Houston, Houston, Do You Read?" (1976)—thus allegorize the amount both individuals and consumer society as a whole will have to change for there to be any kind of human future at all. This is the other face of Haraway's "Chthulucene," its unexpected utopian charge: the future will be monstrous, yes, but it will also be vital, explosively alive, all the more so for no longer being Capital- or Anthro-. One need think only of the aliens Butler created in the series that preceded her *Parables, the Xenogenesis* or "Lilith's Brood" trilogy (a favorite of Haraway's), which sees the (Lovecraftian) Cthulhoid "Oankali" actually achieve the settler-colonialist, Earthseed dream of traveling the galaxy over countless millennia—a feat they are able to achieve precisely through their constant adaptability and pliability, which prevents them from ever becoming ossified by a particular set of cultural or biological assumptions—the authors of a billion Oankali Anthropocenes (see Butler 2000 and Haraway 1990).

Such allegorical texts invite us, in Fredric Jameson's (2005: 232) well-known formulation, to "think the break"—to begin to imagine historical difference in an era that constantly asserts that the future has only one possible path. In an era variously marked as postmodernity, the end of history, and capitalist realism (see especially Fischer 2009), all of which amount to the hopeless unfurling of a single foreclosed future, such radically alternative futures perform a vital role of refusing the death sentence of "a History that we cannot imagine except as ending, and whose future seems to be nothing but a monotonous repetition of what is already here" (Jameson 2003). The view from the Anthropocene looks back at us from a perspective entirely compatible with a capitalist realist future; science fiction's definitional insistence on "historical mutability" and "utopian possibility"¹¹ has the potential to interrupt this spirit of inevitability and, as Jameson euphorically puts it, "jumpstart the sense of history so that it begins again to transmit feeble signals of time, of otherness, of change, of Utopia." If, in the Anthropocene, whiteness cannot see any difference between its own extinction and the extinction of all living things, such stories offer us an alternate path: the end of whiteness as the necessary guarantor of a living future.

What then of stories that attempt to imagine a postcapitalist future in terms that are not allegorical or fantastically posthuman, requiring some radically explosive break in history, but are instead simply mundane narratives of social evolution? What of stories that take the postcolonial multiplicity of the human species as a given, rather than trembling in shock and horror at a history that does not teleologically center coloniality, modernity, or whiteness? In Kim Stanley Robinson's edited anthology *Future Primitive: The New Ecotopias*, the stories work as "thought experiments" and "historical simulations" that are utopian in the sense that they "assume that differences in our actions

now will lead to real and somewhat predictable consequences later on—which means that what we do now matters.” Science fiction—inflected by ecological rationality—is therefore an important part of “a race to invent and practice a sustainable mode of life before catastrophe strikes us” (Robinson 1994: 9). These stories take up the gaze from the Anthropocene, but in a different mode than neo-Romantic melancholy, zombie pessimism, or unhinged fantasy. One in particular stands out as a response to the pessimism of the Anthropocene. Ernest Callenbach’s “Chocco” is an elegy for the “Machine People,” our society, which has been supplanted not by posthuman genomic chimeras but by resurgent primitivism. The story turns the logic of social and biological developmentalism on its head: “It is a daunting task to try and understand a people who lived almost a thousand years ago,” says the Memory Keeper of the River People. “But one thing we must keep uppermost in our minds: the Machine People were no less intelligent than we are. After all, they had the same brains we have, the same physiology exactly” (Callenbach 1994: 193). What has been transformed is not human biology but human systems of social valuation; the collapse of late capitalism and technological modernity more generally has therefore not meant universal extinction but rather the supersession of one historically and environmentally situated strategy for social organization among many.

The effect is similar to the sublime ending of George R. Stewart’s classic apocalyptic novel *Earth Abides* (1949), which sees straggling survivors in a plague-ravaged United States diverging over subsequent decades into culturally distinct tribes, in ecosophic accordance with the resources and environments nearby: here they fish, here they keep horses, here they use bows, here they don’t . . . (Stewart 2006: 331–2). Ursula K. Le Guin’s *Always Coming Home* (1985) likewise imagines far-future Californians who have mostly rejected the totalizing and genocidal assumptions of white-settler ideology and destructive technology in favor of ways of life inspired by Indigenous practices that are outside the mindless, endless expansion of commerce mandated by capitalist modernity. These people understand themselves as our successors, but not our descendants. These rejections of our all-or-nothing attachment to a monolithic present, as dually promoted by both the ideology of capitalist realism and by the assertion of the Anthropocene/Capitalocene, fracture a doomed *singular* future-history for humanity back into vibrant multiplicity. They even open up the happy possibility of a *nonextinctive* Anthropocene, one more resonant with an understanding of the concept that begins deep in prehistory rather than in the so-called Enlightenment, in the nineteenth century, or in 1945: the sustainable, Indigenous Anthropocene of pre-Columbian forestry practices, a reframing of deep time that suggests the ingenious human capacity for world-transformation need not always be identical to destructive, exploitative, and global death—an alternative vision of futurological possibility that is also quite resonant with Yusoff’s *Billion Black Anthropocenes*, as well as with the optimistic account of postcolonial futurity that Grace Dillon and others have called Indigenous futurism.¹²

In Robinson’s own recent fiction his insistence on historical mutability and the ongoing possibility of utopian transformation of the social order has grown somewhat more jaundiced since his earliest novels, but it nonetheless remains a vitally important theme—and one much more focused on the exhilarating possibilities of technology than the neo-primitivist narratives he trumpeted in *Future Primitive*. His *2312* reflects a rewriting of the assumptions of his famously utopian Mars trilogy (1990s); the technological innovations of those books are retained, but the social revolutions have not occurred, resulting in a solar system much more class divided and ecologically devastated than in the earlier books. As a result, the economy of the solar system is fractured: unfathomable wealth for those

living in orbital satellites and on other planets but misery for “Earth, the planet of sadness” (Robinson 2012: 303–4). You can’t terraform a planet where people are currently living; therefore Earth languishes in poverty, starvation, and misery, while an unfathomably rich elite aggressively remakes the rest of the solar system in their image. The terrestrial ecosystem sputters in the throes of climate change; in protected satellites, the last dredges of animal life orbit the planet in sanctuaries, the few scattered exceptions to a global mass extinction event. Like Butler’s *Parables, 2312* thus attempts to think the old consensus future without overlooking its omissions and its injustices or erasing the victims of the storm called progress—to wriggle out of the mood of despair that characterizes the Anthropocene and recover at least some of the techno-utopian futurological ambition that once characterized science fiction, without forgetting the lessons we’ve learned since.

What we see in *2312* is therefore a renewed sense of historical possibility: a decent future for all humanity is neither blithely assumed nor preemptively foreclosed. Interstitial chapters throughout the novel read like fragmented encyclopedia entries, commenting on the events of 2312 from a perspective decades or centuries hence, trying to make sense of the radical historical break that was about to come. Over the course of the novel, characters from the solar system fulfill this encyclopedia’s utopian historical memory, banding together to begin to undo the damage centuries of the Capitalocene have wrought: the economic system of the solar system is reformed, environmental protection and restoration become a priority on Earth, the animals are returned in a wonderful scene that sees them descending from their orbital zoos back to Earth like a kind of reverse Ascension. Crucially, though, the book is not a fantasy of return but rather an accelerationist fantasy of going further, pushing *through* capitalism into some happier postcapitalist era.¹³ *2312* is a relatively rare contemporary example of a “good” technofuture, a posthuman paradise characterized by implanted technology and wild body modifications (which are depicted as advancements and augmentations of freedom and creativity); an explosion in gender categories that doesn’t result in homo- or transphobic panic but that is in fact essentially *irrelevant* to the plot, in the best possible sense; open experimentation with genetics in terrarium laboratories that is organicist and vital rather than Frankensteinian, and doesn’t create monsters; hyperlongevity; postscarcity; neosocialism; an end to racism—and the list goes on. The problem in *2312* isn’t that the good future is somehow secretly bad but rather, as William Gibson once said, that it isn’t evenly distributed yet—and the struggle in *2312* is therefore the struggle to develop that most crucial “survival technology” of all, justice (see Robinson 2010: 213). Robinson’s ambition in *2312* is to extract some hope from the idea that we might yet craft a truly universal human “we”—not the old erasure of all difference by whiteness, but the truly multitudinous and polyvocal achievement of justice for all, for the first time.

Of course none of the book’s eventual reforms is some magic bullet; all are bitterly contested; the work goes on, the encyclopedia from the future tells us, for decades or longer. It seems to continue still, even in that future, better time. We should, perhaps, expect such an extremely prolonged sense of history from a writer who, in *Pacific Edge* (1990), defined utopia as “struggle forever” (Robinson 2013: 95); part of what politically revolutionary science fiction trains us to recognize is precisely this endlessly renewing need for social change in the face of ever-changing historical conditions. Despite our self-important fantasies about the supposed finality of our times, neither human nor planetary history ever truly “ends.” Accordingly none of the encyclopedia entries offers narrative closure, even on the level of form; all are fragmentary, beginning in medias res and ending

unpunctuated, cutting off before the moment of “culmination” or historical break can ever be described fully. The end of every thought remains always just out of reach, always pure potential, never actualized. Indeed, what may be *most* radically utopian about *2312* is precisely its absolute refusal of narrative closure. “There is still and always the risk of utter failure and mad gibbering extinction,” the book announces at its close; consequently, “There is no alternative to continuing to struggle” (553). The deliberate lack of a period at the end of the sentence registers Robinson’s pointed denial of any final pronouncement about the human project, endorsing neither pie-in-the-sky, head-in-the-sand utopianism nor the dejected, hopeless melancholy of the Anthropocene; instead, somewhere in the muddled and disordered murk of history, one era ends, another begins, and the story goes on.

Conclusion

Of course the taxonomy of science-fictional replies to the assertion of the Anthropocene sketched here does not account for every possible response to our ecological crisis, nor does it account for important texts like N. K. Jemisin’s landmark Broken Earth series (2015–2017), the first trilogy to ever to win the Hugo Award for Best Novel for each installment, or Richard McGuire’s inventively contemplative graphic novel *Here* (2014), which both exist at the interstices of several of these categories. What this article does register, I hope, is a general crisis in the way we represent and talk about the future on all scales, from the scale of local community to the entirety of Planet Earth, both in our science and in our science fiction. Like Fukuyama’s earlier “end of history,” the now-hegemonic assertion of the Anthropocene too often names the future as a site of totalizing finality that is ultimately the silence of a universal grave, for human and animal alike; the science fiction writers I discuss seek utopian formulations that, as best they can, refuse that spirit of doomed necrofuturity. Reading the Anthropocene by way of reading science fiction can help restore to the concept some of the political optimism originally inherent in the concept as first articulated by Crutzen; the point, after all, was to use the rhetoric of stratigraphy not bloodlessly or dispassionately but to shock the scientific community into recognizing the true extent of humankind’s destabilization of the global climate and to galvanize it as a political force:

Unless there is a global catastrophe—a meteorite impact, a world war or a pandemic—mankind will remain a major environmental force for many millennia. A daunting task lies ahead for scientists and engineers to guide society towards environmentally sustainable management during the era of the Anthropocene. This will require appropriate human behaviour at all scales, and may well involve internationally accepted, large-scale geo-engineering projects, for instance to “optimize” climate. At this stage, however, we are still largely treading on *terra incognita*. (Crutzen 2002: 23)

To call the Anthropocene a “daunting . . . *terra incognita*” is an understatement to say the least; as discussed above, the sheer enormity and multiplicity of the ecological crisis can sometimes seem to guarantee only a future of deprivation, suffering, and mass death (to say nothing of the dread, in 2020, of seeing *pandemic* in Crutzen’s 2002 list of possible additional catastrophes). But the science fiction texts I have discussed, from the techno-utopian to the neoprimitivist to the weird and otherworldly Chthulucenic, speak back against this foreclosed future, and they help us restore a sense of possibility and even opportunity to an Anthropocene that might otherwise look like a final pronouncement of

doom on the human species. They each call on us, in their own way, to remember that there is no alternative to continuing to struggle, if we hope to cancel the apocalypse.

Notes

- 1 I will return to discuss the more utopian dimensions of this framing in my conclusion. Haraway says the suggestion of Lovecraft's incomprehensible elder gods is incidental, but regardless of her intention the connection is inescapable.
- 2 The term dates to Donald A. Wollheim's *The Universe Makers: Science Fiction Today* (1970), which traces the development of this "consensus future" from Golden Age science fiction writers, particularly Isaac Asimov. Kim Stanley Robinson also analyzes the consensus future as a future that failed in the introduction to his edited anthology *Future Primitive*, discussed in more detail below.
- 3 The language here, from the perspective of a character born in the 1970s and writing after the 2030s, is an attack on ecological denialism; while most take the Pox as "accidentally coinciding" crises, he understands them instead as the product of a "refusal to deal with obvious problems" (Butler 1998b: 8–9).
- 4 In an interview with Larry McCaffery in *Across the Wounded Galaxies* (1990), Butler makes all this explicit: "I think we humans need to grow up, and the best thing we can do for the species is to go out into space. . . . we can use the stresses of learning to travel in space and live elsewhere—stresses that will harness our energies until we've had time to mature" (69–70).
- 5 This is unhappily true in a metatextual sense as well; despite dozens of attempts to write a sequel over nearly a decade, Butler found herself completely unable to continue the story.
- 6 Csicsery-Ronay in turn finds the quote in Hardt and Negri's 2000 *Empire* (221).
- 7 Although commonly attributed to offhand, conversational remarks by Fermi, the first formal write-up of the paradox was Michael H. Hart's "An Explanation for the Absence of Extraterrestrials on Earth" (1975).
- 8 "The nightmare, in good nightmare fashion, has something absurd and nearly inescapable about it: either we will begin running out of oil, or we won't" (Kunkel 2008).
- 9 Ted Chiang's transcendent "The Great Silence" (2016), one of the most harrowing and sad short stories yet published in the Anthropocene, is thus this utopia in negative: the Arecibo telescope fruitlessly looking for aliens is the occasion for a parrot to ruminate on humanity's murderous indifference toward the thinking, feeling co-inhabitants of its own home planet.
- 10 For the extended reading of the Oryx and Crake series, see Canavan 2012.
- 11 The quoted terms are two of the three categories linking critical theory to science fiction in Carl Freedman's essential *Critical Theory and Science Fiction* (2000); the third of these is "material reducibility," also a key component of ecological thinking in the Anthropocene (xvi).
- 12 See Dillon 2012, as well as the special double-issue of *Extrapolation* on Indigenous futurism she coedited with Michael Levy and John Rieder in 2016. For a reading that importantly problematizes the tendency in climate change narratives to place Indigenous peoples "in historical categories designed by non-Indigenous persons" in ways that actually recenter whiteness and settler ideology, see Whyte 2018.
- 13 See, among other places, Shaviro 2015, where he notes that for the accelerationist "the only way out [of capitalism] is through" (2).

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