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Thomas S. Davis

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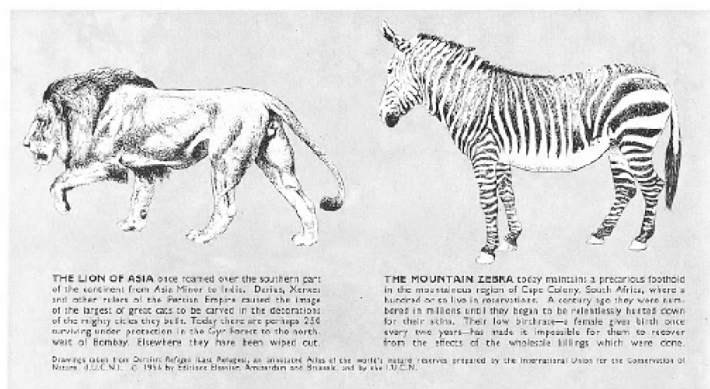
MfS Fossils of Tomorrow: Len Lye, J. G. Ballard, and Planetary Futures

Thomas S. Davis

In their 1958 essay for *The UNESCO Courier's* special issue on "Man Against Nature," Marguerite Caram and J. J. Petter wonder how we might view living animals and existing ecologies if we perceive them as "fossils of tomorrow" (6), as future "victims of Man's expansion and struggle for more living space." By imagining such future extinctions, Caram and Petter wager that readers will be able to see and will be catalyzed into action by the vast consequences humans as a species have on the world around them. Their argument gathers force and urgency through the treatment of the present as the forerunner of an undesirable future. For literary critics and historians, this narrative technique is quite familiar. Figuring the present as "the determinate past of something yet to come" (Jameson 288) has become one of the most recognizable traits of speculative literature. Contemporary novels such as Margaret Atwood's *MaddAddam* trilogy (2003–2013), Paolo Bacigalupi's *The Windup Girl* (2009) and *The Water Knife* (2015), Jenni Fagan's *The Sunlight Pilgrims* (2016), and Kim Stanley Robinson's *New York 2140* (2017) share this technique with nonfiction such as Jan Zalasiewicz's *The Earth After Us* (2008) and the United Nations *Millennium Ecosystem Assessment* (2005).¹ Like Caram and Petter's "Fossils of Tomorrow" essay, these works transport readers to a future where

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FOSSILS OF TOMORROW

by Marguerite Caram and J.J. Petter

International Union for the Conservation of Nature and Natural Resources

HUNTED to excess, victims of Man's expansion and struggle for more living space, prey to epidemics, prejudices and other destructive forces, wild creatures are diminishing in numbers. Entire species are disappearing from the face of the earth. In the 19th century alone 70 species became extinct and in the past 50 years a further 40 have died out. Today the existences of a further 600 are threatened. One after another they seem destined to join the long list of animals each of whose names is now no more than a scientific appellation used by the paleontologist

and whose only relics are skeletons, reconstituted—with varying success—in museums. It is true that in recent years there has been some heartening progress in wildlife protection in some countries, where governments have set up conservation departments. But, on the whole, if it were not for the few scientists, nature lovers and economists who are trying to save them, realizing their importance in nature's biological pattern, many animals would quickly be doomed to extinction, and would be fated to become the fossils of tomorrow.

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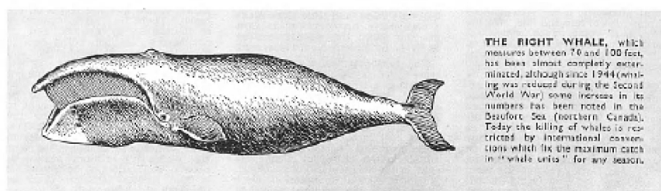


Figure 1. "Fossils of Tomorrow," Marguerite Caram and J.J. Petter, *UNESCO Courier*, January 1958, p. 6. Courtesy of UNESCO.

we witness the extraordinary and irreversible effects of the human species' expanding power as it unfolds in the present. Yet, unlike the twenty-first-century texts listed above, the 1958 publication date lends "Fossils of Tomorrow" a different sort of historicity.

We learned in the fall of 2016 that the proposed date for the onset of the Anthropocene should be around 1950, which locates the speculative warnings from Caram and Petter within the early days of our new geologic epoch. They were not alone in sounding alarms about the ecological consequences of postwar economic growth. Midcentury is the era of iconic environmental works such as Fairfield Osborne's *Our Plundered Planet* (1948), Roger Revelle and Hans Seuss's groundbreaking 1957 essay on fossil fuels and anthropogenic climate change, Murray Bookchin's *Our Synthetic Environment* (1962), Rachel Carson's *Silent Spring* (1962), Paul and Anne Ehrlich's *The Population Bomb* (1968), and The Club of Rome's *The Limits to Growth* (1972), among others. In the literary sphere, J. G. Ballard's Elemental Apocalypse Quartet—*The Wind from Nowhere* (1961), *The Drowned World* (1962), *The Burning World* (1964), and *The Crystal World* (1966)—explores various environmental catastrophes; Amos Tutuola's *The Palm-Wine Drinkard* (1952) and Wole Soyinka's first major play *The Swamp Dwellers* (1958) indirectly mediate the violence of resource capture in Nigeria; John Christopher's *The Death of Grass* (1956), Anthony Burgess's *The Wanting Seed* (1962), and Harry Harrison's *Make Room! Make Room!* (1966) imagine overpopulation leading to societal collapse. Because these works share with Caram and Petter an explicit concern with the myriad consequences of "Man's expansion," they simultaneously offer new prospects and risks for the study of midcentury as the literature and culture of the Anthropocene. The question now is how we should receive transmissions about the Anthropocene from writers and artists during the last century who were working prior to its conceptualization in our century. If it will ultimately prove unsatisfactory, as it so often does, to recode earlier cultural work in the critical vernacular of the present, then we must think carefully about what to do with the various assemblages of nature, energy, and growth that preoccupy so much of the literature and culture of midcentury.

In what follows, I broadly argue for the value of artworks to conceptualize what we now identify as Anthropocenic concerns: the collapsing divide between nature and culture, biodiversity loss, fossil fuels and resource use, dramatic changes to Earth systems, and the prospects for a livable future on an altered planet. My focus will fall largely on Len Lye's *The Birth of the Robot*, a 1936 short film made for Shell Oil, and Ballard's novel *The Drowned World*. Both works project and model relations between social forms and planetary futures. Yet, what makes Lye and Ballard most compelling for a literary and cultural history of the Anthropocene is that their arrangements of nature, energy, and growth is asymmetrical with the Anthropocene

as we know it today. That is to say, they do not get the Anthropocene right. Yet they do open the way for us to think about and value mismatches between artworks that share Anthropocenic concerns but do not reflect current understandings of our new geologic epoch.

Before moving to Lye and Ballard, I want to begin with some reflections on the claims made about the impact of the Anthropocene on humanistic inquiry. It is true that the concept of the Anthropocene has posed vast new conceptual challenges for the humanities and qualitative social sciences. We have witnessed dramatic rethinkings of nature, planetarity, multispecies interdependency, human agency, and temporality. Dipesh Chakrabarty's oft-quoted series of essays have argued that the concept of the Anthropocene implies severe methodological problems for history and postcolonial studies, including "the ideas about the human that usually sustain the discipline of history" as well as "the analytic strategies that postcolonial and postimperial historians have deployed in the last two decades" (198). Yet other disciplines such as anthropology, geography, and history itself have responded to the Anthropocene without overhauling their methods.² What will be required of literary and cultural criticism to read and think with the Anthropocene? What will govern the selection of works, and what value will we assign to those art objects?

There's little evidence in recent literary criticism that the Anthropocene has precipitated a methodological crisis. As the Anthropocene has shuffled our concepts and questions, our archives have shifted and expanded, which has allowed some voices from the past to become newly resonant. Of course, that does not mean there are no risks for our critical methods. One of the temptations of the Anthropocene is to see it as an all-encompassing, authoritative narrative, a new universalism whereby the problem of the human as a species not only dwarfs social differences and historical particularity but also potentially erases the multiple ways capitalism has inscribed itself into the geophysical processes of the earth. If we yield even slightly to the temptation to shift the scale of analysis from site-specific and historically nuanced understandings of the Anthropocene to the level of the human species as such, we risk two fundamental errors. First, we have abundant evidence of what Timothy Gore, in the title of a 2015 Oxfam media briefing, calls "Extreme Carbon Inequality"; that is, we know a wealthy minority largely concentrated in Western Europe and North America is responsible for the lion's share of carbon emissions since nineteenth-century industrialization.³ It is equally true that capitalist ideologies and practices of development are responsible for remaking much of the Earth to facilitate the extraction of natural resources as well as the generation and distribution of energy. Any

analytic procedure that considers the human species as an undifferentiated agent of planetary change will depoliticize the Anthropocene at the very moment when it needs to be made more political. Second, such temptations to scale up to the level of the human as a species flattens out the rough, uneven textures and temporalities of environmental crisis. Insofar as these are problems of scale, they are neither novel nor entirely unfamiliar. Arguments about scale have long preoccupied global literary studies, the new world literature, and distant reading, to name a few. We know widening the scale of analysis enables us to see things that were otherwise imperceptible, even as that very movement makes particularity vanish.⁴ Artworks themselves often perform scalar modeling and shuttle between general and particular; the work of much dialectical criticism has been to recover those movements and argue that they are socially and culturally meaningful. If our methods of reading are flexible enough to accommodate the Anthropocene, we need to think more about how the Anthropocene operates differently from and in relation to other large-scale phenomena—capitalism, modernity, globalization—that have animated our discussions of midcentury literature and culture.

This is an especially fraught scenario for scholars working on midcentury literature and culture. Perhaps the most immediate problems arise from the temptation to see the Anthropocene as yet another capacious and nearly global narrative for a period that certainly has no shortage of them. Midcentury literature and culture is already interpreted alongside the Cold War, decolonization, the birth of human rights, and the ascendancy of American hegemony. These narratives are not unrelated to Anthropocenic concerns. Access to and use of natural resources, especially those fossil fuels from the late Devonian and the Carboniferous, greatly determined how those histories unfolded. Still, we do not want to forge direct relationships between the inner workings of cultural objects and any external phenomenon; such analysis potentially depletes its own objects of their conceptual power while preordaining the types of material we deem valuable. If the claim now is that natural history and human history are not separate spheres, and perhaps have not been for some time, then we might begin to ask how artworks have loosened, tightened, or reimagined the relations of human and nonhuman nature.

We are not without help here. Several literary critics have offered pathways for tracing the migration of Anthropocenic concerns into the thematics and forms of literary works before and after accepted Anthropocene periodizations. Tobias Boes and Kate Marshall, for example, note that “the ability of the Anthropocene to lodge itself firmly within various cultural forms . . . has far outpaced its scientific

accounting" (60). Ted Howell brilliantly reads E. M. Forster's fiction alongside early twentieth-century ecological thought and recasts Forster as a modernist highly attuned to environmental change; in Howell's words, "Forster noticed the arrival of the Anthropocene early" (568). Jesse Oak Taylor has proposed a "climatic modernism" (188), one where novels like Woolf's *Orlando* articulate a kind of climatological understanding of history; in his reading, *Orlando* "model[s] climate change in action before scientific understanding caught up with the reach of the imagination" (201). Ian Baucom argues that the contemporary historical novel might help us think of climate futures shaped by our carbon powered past, but not wholly determined by it; in his elegant phrasing, literature opens "possibilities for thinking the noninevitability of [an] apparently inevitable future" (138).

This brief sampling of recent criticism outlines three functions of literature in the Anthropocene: as anticipatory, as opening spaces for unauthorized and speculative thought, and as modeling alternative historical understandings. All of these forms of reading are highly generative and provocative, but none are exactly new. If the Anthropocene has yet to precipitate a methodological crisis or to spur radical change in how we treat cultural production, we might best treat this moment as, in the words of Tobias Menely and Jesse Oak Taylor, "an opportunity for literary studies to test and transform its methods by examining how the symbolic domain might, or might not, index a historicity that exceeds the human social relation and encompasses planetary flows of matter and energy" (5). The point, then, is that we already possess forms of reading and thinking that can engage the Anthropocene. Our stories and judgements of cultural history have long required critical methods flexible enough to attend to the ways artworks formalize and thematize their own present moment and allow us to historicize that thinking without determining it. In other words, aesthetic mediation and historicity still matter, and perhaps matter even more.

I turn to Lye and Ballard because their works mediate the idealizations and anxieties attached to shifting notions of human and planetary futures in their own historical moments. Yet neither *The Birth of the Robot* nor *The Drowned World* is anticipatory or prophetic in any strict sense; in other words, Lye and Ballard have not figured out what the sciences now claim to be true nor do they proffer solutions applicable to our current predicament. The worlds they conjure depart from scientific consensus in significant ways. Lye's film appears in 1936, preceding the post-World War II periodizations of the Anthropocene, and imagines a planet made more inhabitable by fossil fuels; Ballard's vision of climatic instability erases any anthro-

pogenic role from the planet's transformation. Instead of presaging our contemporary predicament, we might instead historicize the ways they imagine growth as central to our planetary futures.

Petro Futures: Len Lye's *The Birth of the Robot*

Len Lye's fondness for species mutation, natural materials, and biomorphic forms should immediately nominate him as an artist perfectly suited to studies of the Anthropocene and modernism, cinema, or the avant-garde. Yet, even with the recent growth in midcentury and late modernist scholarship, Lye somehow remains a peripheral figure. There's very little rationale for his absence from the emerging canon of late modernist artists. Roger Horrocks's recent biography depicts Lye as an artist who was deeply involved with the most vibrant and experimental art communities in Britain and America. Not long after he arrived in London, he began exhibiting with the Seven and Five Society in the 1920s and quickly became friends with Laura Riding, Robert Graves, Henry Moore, Siegfried Sassoon, and Jacob Bronowski. Paul Nash and Roger Fry all praised his work, lending him credibility from multiple corners of the London art scene. In the 1930s he worked alongside the British Surrealists and John Grierson's documentary film movement. In the years after the Second World War he was loosely associated with the abstract expressionists in America.

Lye's work in the late 1920s and early 1930s turns to natural forms and their transformation, foreshadowing concerns that reappear in *The Birth of the Robot*. Horrocks describes this aesthetic shift in the early 1930s: "Now the shapes in his pictures looked like unknown species of fish, animals, plants, or microscopic organisms. Often these creatures (or 'protagonists', as Lye called them) seemed to be undergoing a major change—an amoeba was turning into a plant, the plant was starting to fly, its roots were changing into limbs" (103). Similar biomorphic figures graced the book covers of Laura Riding's *Twenty Poems Less* (1929) and *Laura and Francisca* (1931); his 1929 film *Tusalava* put these creaturely figures into motion as it narrated the evolution of life from single celled organisms to more complex life-forms.

Lye's bewitching, kinetic artworks join together images of elemental life with the energies of modernity, something best captured in his cinematic innovations. Lye's move toward further abstraction did little to diminish the appeal of this particular fusion. His astonishing short film *A Colour Box* (1935) drew the most attention and increased his audience. A film without a camera, *A Colour Box* consists of lines,

shapes, and colors painted onto the film itself. Cuban dance music gives the appearance of visual forms moving in coordination with the soundtrack. The short film concludes with an advertisement for the General Post Office. The widespread acclaim of the film raised Lye's profile in these early days of corporations entering the domain of public relations and targeting the cultural world for its abilities to portray business interests as distinctly, and benevolently, modern.

By the mid-1930s, Lye was recognized as an avant-garde artist uniquely capable of appealing to wide audiences.⁵ His talents and appeal seemed ready-made for companies hoping to leech the cultural allure of the modern from their association with known artists. Shell-Mex, the marketing arm of Royal Dutch Shell and British Petroleum, already boasted a robust advertising campaign, or what Mel Evans would now call artwashing; their campaign spread across the arts, including the *See Britain First* posters made by such renowned painters as Graham Sutherland, Vanessa Bell, and Paul Nash, John Betjeman's *Shell Guides* guidebook series, and The Shell Film Unit.⁶ At the behest of Grierson and Humphrey Jennings, Jack Beddington, then head of publicity for Shell, signed up Lye to lend his cinematic talents and prestige to Shell's vision of petromodernity. If numbers and reach are any indication, Shell's use of Lye was a success. Lye's biographer reports that *The Birth of the Robot* "was eventually screened by 329 cinemas and viewed by more than three million people in Britain, a staggering result for a film of its kind" (Horrocks 147).

The Birth of the Robot dazzles with its experiments in puppetry, color, and animation; it is also a dialectical masterpiece of what Graeme Macdonald calls "extractive cultural production" (531). Over the course of seven minutes, Lye's film puts into motion a set of binary oppositions that reverberate across discussions of the Anthropocene: resource depletion/abundance, human/nonhuman, and historical time/natural time. Lye opens his story with the latter pairing. A vibrating hourglass alarm clock awakens Father Time who sets the planets into motion.

The film shifts from the cosmic scale to Earth, which then rotates to an Egyptian desert dotted with pyramids. Lye introduces historical time by way of juxtaposition of machine powered modernity and the monuments of an ancient civilization. A single motorist drives up and down the Egyptian pyramids, tying the power of modernity directly to combustion and fossil fuels. To further emphasize the point, the driver's mastery of the landscape dwindles alongside his fuel supply. A violent sandstorm sweeps up the motorist. He falls limply over the steering wheel and the car, anthropomorphized with eyes and a mouth, and glimpses the word "OIL" and a petrol station that turns out to be a mirage.



Figure 2. Image of OIL from *The Birth of the Robot*, dir. Len Lye, 1936. Courtesy of the Len Lye Foundation and Ngā Taonga Sound & Vision.

The illusion of oil serves to remind the viewer of its reality: there is no modernity without energy and there is no life without oil. This is precisely why we transition from the mirage to a death scene. Father Time reappears and swings a scythe; a death's head and a shaking hourglass quickly follow, signaling that resource depletion and human mortality are inseparably linked. The screen goes dark before returning us to the desert where we find the car and the skeletal remains of the driver scattered atop the sand.



Figure 3. Image of car and driver from *The Birth of the Robot*, dir. Len Lye, 1936. Courtesy of the Len Lye Foundation and Ngā Taonga Sound & Vision.

The driver's death comes at the midpoint of the story, which thus far has braided together human power and vulnerability around energy supply. Depleted fuel translates into greater exposure to the whims of nature and, eventually, to death. The screen again fades to black and transitions to the heavens where a reawakened, mechanized Venus figure strums her shell-like harp. Her musical notes morph into drops of oil, falling from the sky onto the driver's remains. Dead matter from the late Devonian is refigured as life giving water and its vertical trajectory is flipped; instead of oil erupting out of the earth's depths, it descends from some other extra-planetary source. The being that is awakened is no longer human, but something post-natural that moves and thrives via the gifts of fossil fuel. The driver is transformed into a robot, the mechanized posthuman figure for Shell created by the avant-garde designer Edward McKnight Kauffer.

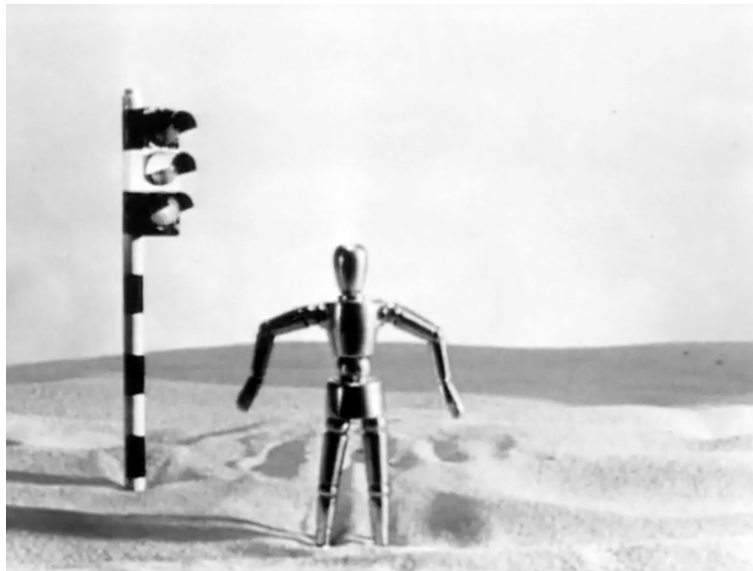


Figure 4. Image of Shell robot from *The Birth of the Robot*, dir. Len Lye, 1936. Courtesy of the Len Lye Foundation and Ngā Taonga Sound & Vision.

We see the shadow of the robot cast across a changing Earth; the bare, lifeless desert becomes a landscape and highways and infrastructure for oil powered transport sprawl across the planet's surface, a sort of terraforming of the planet for this new petromodernity.



Figure 5. Image of planetary surface from *The Birth of the Robot*, dir. Len Lye, 1936. Courtesy of the Len Lye Foundation and Ngā Taonga Sound & Vision.

The story of Lye's quite wonderful experimental film is a new kind of planetary genesis. Fossil fuels enable humans to transcend their biological limits and become a planet altering force capable of remaking the surfaces and skies of the Earth. The dead geologic matter below the surface now returns to rewrite the surface. Yet if much of the Anthropocene literature emphasizes that, in David Grinspoon's words, "we are at the controls, but we're not in control" (ix), *The Birth of the Robot* veers in a different direction. Lye, or at least Shell, wants fossil fuels to seem life-giving and abundant. They generate the expansive growth of human societies and systems across the planet's surface and, quite possibly, allow for a new posthuman figure who has surpassed human limits of life and death. But this story's imaginative, futuristic vision does not completely negate the very real, very

stark acknowledgment that modernity and human progress is tied to energy. Petromodernity is not merely a form of life but is life itself. As we watch the resurrection and transformation of our automobile driver into a tireless, planet shaping robot, we scarcely forget the human whose fate was bound to violent nature and dwindling petrol. Lye's magnificent tale of abundant energy negatively conjures the twin anxieties of resource scarcity and dependency, anxieties which would increasingly dominate social, economic, and political life in the decades after the Second World War.

Zones of Transit: J. G. Ballard's *The Drowned World*

The same cluster of Anthropocenic concerns—human, planet, growth—that come together in the petro-utopian vision of *The Birth of the Robot* recur in a slightly different configuration in Ballard's *The Drowned World*. The 1962 publication date places Ballard's novel next to Carson's *Silent Spring* and the less heralded *Our Synthetic Environment* by Bookchin. Both books chillingly detail the ways human actions contaminate the very conditions for life. As revolutionary as Carson's book was (and Bookchin's should have been), this type of ecological thinking gathered force around 1945 and recast this moment of rapid postwar capitalist growth as endangering the habitability of the planet. Osborne's *Our Plundered Planet*, *The Man Against Nature Exhibit* at the National Museum of Natural History in France (1955), and Ehrlich's *The Population Bomb* (1968) all pondered the ways population growth, resource depletion, postwar capitalism, and technological developments were altering not just the natural world, but prospects for livability itself. Osborne's *Our Plundered Planet* appeared in March of 1948 and was extraordinarily popular; Pierre Desrochers and Christine Hoffbauer write that "it had already been reprinted eight times by the end of its year of publication" (39). It was reprinted three times by May. It soon became required reading in universities and was studied by Paul Ehrlich at the University of Pennsylvania.⁷ In the waning days of the Second World War, Osborne began to imagine the relationship between humans and nature as another type of warfare, what he dubs "the silent war, eventually the most deadly war" (vii); for Osborn, the accelerated cultivation and consumption of natural resources would lead to resource scarcity and the undoing of civilization and human habitability. Perhaps most strikingly to us in 2018 is Osborne's claim of "man . . . becoming for the first time a large-scale geological force" (29). The claim seems prescient enough, reimagining human beings as shapers of

the planet. And yet even as these iconic works of postwar environmentalism critique the powers of the human species, the idea of the human itself remains unchallenged.

Ballard's *The Drowned World* enters this expanding sphere of investigation and speculation on human and planetary futures. In the broadest sense, *The Drowned World* is about an energy crisis that has no human origin and for which there can be no human answer. The world in 2145 has undergone two "gigantic geophysical upheavals" that have irreparably altered the Earth (32). A series of solar storms have warmed the Earth, making much of the planet uninhabitable. Under UN direction, populations have been directed to settle in the Arctic Circle and Antarctica. The second upheaval follows the melting polar ice caps, which submerge much of the world beneath rising seas. This by now quite familiar scenario gives Ballard's novel, and indeed all of the Elemental Apocalypse Quartet, new currency as forerunners of cli-fi. In the words of Adrian Tait, Ballard's novels might now be recategorized "as 'cli-fi' before climate change was itself understood" (30). Critics like Tait and Jim Clarke see these early works as anticipating later climate change fiction, despite some noticeable differences. Clarke notes that these early novels (save *Drought*) "crucially . . . omit discussion of anthropogenic blame" (9). Yet I would argue *The Drowned World* becomes more valuable precisely because it does not match up with or even anticipate anthropogenic climate change. In Ballard's aqueous world, there is no change to be made in human behavior to prevent an undesirable future. This novel loses the precautionary tone of so many other disaster and dystopic fictions and, instead, thinks the human neither as master nor victim of natural forces but as a living archive of deep time.

Ballard's imagined planetary crisis invokes a crisis of the human in the most fundamental way. This human crisis gets mapped out through two competing plots: a species preservation plot, one quite familiar to readers of apocalyptic and disaster fiction, and a less routine species transformation plot. Over the course of the novel, the protagonist, Robert Kerans, moves from one plotline to the other. Kerans is a biologist charged with mapping and categorizing the changing flora of this new world. Hot temperatures and increased solar radiation have both mutated existing species of plants and resurrected those from the Carboniferous Period. Gymnosperms and other plant life from the Triassic re-emerge and iguanas roam freely. In the first half of the novel, the scientists, military figures, and Beatrice, the lone woman in the novel, lethargically live through the heat, subsist on diminishing supplies of food, and coexist uneasily with

the reptiles taking over the ruined hotels and buildings. The scientists and military personnel associated with this plot are on expedition from Camp Byrd in Northern Greenland. The polar regions are now temperate zones, where climate refugees can reproduce the forms of social life they were forced to abandon: "Within the new perimeters described by the Arctic and Antarctic Circles life would continue much as before, with the same social and domestic relationships, by and large the same ambitions and satisfactions" (58). Yet, even preservation in these more habitable geographies appears to be a losing game. Ballard's narrator tells us that human reproduction has precipitously declined: "the birth of a child had become a comparative rarity, and only one marriage in ten yielded any offspring" (35). Even with continued social reproduction at the polar settlements, human populations will inevitably dwindle and expire.

The Drowned World sketches out other modes of preservation beyond polar retreat. Kerans and Beatrice contemplate remaining at their Ritz hotel after their colleagues depart for Camp Byrd. Art nouveau statuary, "lavish brocaded furniture" (20), an air conditioner, and the abandoned luxuries of a swiftly departed Milanese financier signify the "last vestiges of a level of civilization now virtually vanished forever." For Kerans, the Ritz offers a temporary reprieve both from the cramped, uninviting conditions at Camp Byrd and the dreams that will eventually shift him from the species preservation plot to the species transformation one. Another version of preservation takes shape through the rogue Strangman and his itinerant band who roam in search of the fragments of the old world. Strangman guides Kerans to the storehold of his ship and unveils his collection of Holocene cultural debris:

a huge ornamented altarpiece at the far end of the hold, fitted with elaborate scroll-work and towering dolphin candelabra, topped by a neo-classical proscenium which would have covered a small house. Next to it stood a dozen pieces of statuary, mostly of the late Renaissance, stacks of heavy gilt frames propped against them. Beyond these were several smaller altarpieces and triptychs, an intact pulpit in panelled gold, three large equestrian statues, a few strands of sea-weed. . . . votive urns, goblets, shields and salvers, pieces of decorative armour. (111)

Strangman later quotes T. S. Eliot's *The Waste Land* to Kerans, as if to align his gathering of fragments with an older modernist sensibility. He later engineers a tremendous spectacle, the draining of what turns out to be Leicester Square. This dramatic aesthetic performance

transforms Strangman: he loses “all traces of courtly refinement and laconic humor” (142) and becomes “callous and vulpine.” It takes a *deus ex machina* intervention from Riggs and his crew to save Kerans and Beatrice from Strangman. This is precisely where the two plotlines—species preservation and species transformation—diverge most sharply. Kerans detonates explosives to flood the square again, drawing the ire of Riggs and his crew before heading south into the most uninhabitable equatorial regions. Kerans’s flight south positions his character against Strangman and Riggs; in the end, these latter two characters appear less as oppositional ones, even if they have their weapons aimed at one another, but more as two iterations of the same species preservation plot.

The species preservation plot pits humans against nature in a final bid to preserve human existence in some recognizably modern social form. The other plot strand, one articulated in more philosophical terms throughout the novel by Dr. Bodkin and Kerans, thinks through the ongoing transformation of all species—plant, animal, human—on a planet reverting to an earlier geological period. Jim Clarke characterizes the transformative relation between climate and human in *The Drowned World* this way: “If climate changes, we too must change, Ballard warns, and not merely by way of superficial adaptation. Instead transformation must occur on a personal and fundamental level” (16). To be sure, Ballard’s first four novels all wonder what sort of human will emerge, or disappear, from massive environmental change. Given the long trail of clues Ballard has left his readers in interviews, essays, and his late autobiography *Miracles of Life*, it is hardly surprising that critics often prioritize the psychological, or personal, dimensions of Ballard’s fiction. Yet it is impossible to reduce *The Drowned World*’s version of species transformation to the merely personal as it loops psychology, biology, and geology over and into one another. How are we to untangle this knot? Ballard’s concept of “inner space,” which preoccupied him throughout the 1960s, offers some clues (“Time, Memory and Inner Space”).

Inner space was never meant to be synonymous with interiority or psychological depth. Ballard’s essays and interviews from the 1960s suggests that inner space refers to a new orientation for science fiction, an indirect relation between fictional creation and the writer’s life, and, more provocatively, a dialectical aesthetic. In an essay from *The Woman Journalist Magazine* written around the time of *The Drowned World*, Ballard more explicitly spells out inner space as the domain of a different strand of science fiction and as a dynamic, dialectical aesthetic: “speculative fantasy, as I prefer to call the more serious

fringe of science fiction, is an especially potent method of using one's imagination to construct a paradoxical universe where dream and reality become fused together, each retaining its own distinctive quality and yet in some way assuming the role of its opposite, and where by an undeniable logic black simultaneously becomes white." He reiterates many of these concerns in a 1969 interview for *Speculation* where he identifies inner space as "the meeting ground between the inner world of the mind and the outer world of reality."

In the novel's terms, the meeting point between inner and outer worlds is articulated by several characters as a "zone of transit" (*Drowned* 25), an idea that occurs as early as his first, disavowed novel *The Wind from Nowhere*.⁸ In *The Drowned World*, this phrase exchanges the spatial logic of the species preservation plot for a theory of geological, psychological, and biological entanglement. Early in the novel Kerans wonders "what zone of transit he himself was entering, sure that his own withdrawal was symptomatic not of a dormant schizophrenia, but of a careful preparation for a radically new environment" (25). This is but one place where Ballard invokes psychology explicitly to displace it as an explanatory narrative for the alterations in his characters. In one of Bodkin's exchanges with Kerans, he argues that the climatic rupture, the passage out of the relative stability of the Holocene into something else, also transforms the humans who populate this world:

Not in our minds, Robert. These are the oldest memories on Earth, the time-codes carried in every chromosome and gene. The further down the CNS you move, from the hind-brain through the medulla into the spinal cord, you descend back into the neuronic past. For example, the junction between the thoracic and lumbar vertebrae, between T-12 and L-1, is the great zone of transit between the gill-breathing fish and the airbreathing amphibians with their respiratory cages, the very junction where we stand now on the shores of this lagoon, between the Paleozoic and Triassic Eras. (56)

This is one of the most remarkable passages in the novel. "Zone of transit" encompasses biological, psychological, and geological space: the psychological activity here, the memories, are planetary, but embedded in human genetic material. The human body contains a record of evolutionary biology of other species. And, finally, Bodkins dates the geological moment that the solar storms have conjured from the deep past. His (or Ballard's) terminology is off: the boundary point is between the Paleozoic and Mesozoic eras or the Permian and Triassic periods. Either way, Ballard's reference clearly is to the

Great Dying, the largest scale extinction event in Earth's history. The zone of transit, then, is simultaneously a geological transition that enables certain forms of life while threatening others. Life-forms will adapt or expire, and Ballard's novel meditates on the possibilities of a human future on an altered planet.

So, what are these human futures? The novel concludes with Kerans venturing south into the hottest and most uninhabitable regions of the planet where he finds Hardman, now blistered and blinded by extreme heat and "no more than a resurrected corpse" (194). Ballard's description implies that the delirious, nearly dead Hardman is transforming from human into some plantlike being. His legs "like two charred poles of wood, stuck out uselessly in front of him, sheathed in a collection of tattered black rags and bits of bark. His arms and sunken chest were similarly clothed, strung together with short lengths of creeper" (193). Deep into the southern regions, Hardman's hybrid human and plant appearance forecasts what awaits Kerans: the biological and geological awakenings in human bodies and dreams now take material shape as the human species transforms into some other creature. Hardman flees further southward and Kerans eventually follows. In its closing lines, the novel describes Kerans as "a second Adam searching for the forgotten paradises of the reborn sun" (198). The return to Edenic myth here signals an ecological reset, a new relation of human and nonhuman nature, and perhaps a desire for some sort of prehistorical equilibrium that is all but impossible in the world Ballard offers to us. One way we might read this concluding gesture, and specifically the references to Adam in the final lines, is that Ballard cannot imagine humans adapting their social forms to Earth systems that have exceeded Holocene variability; in the logic of the novel, Ballard urges us to rethink fundamentally the relationship of human futures to Earth's deep past, to see human beings not merely as resilient psychological and biological beings but as complex forms of life that will evolve and end like other species.

In Lye and Ballard's speculative visions, the fossils of tomorrow are not what we become in the strata or what geology will tell us about this era of human existence; rather, fossils of tomorrow name the return of the geologic as a shaping force in human life. In Lye's film, human and planetary transformation occur through the majestic power of fossil fuels; in Ballard's more distant future, deep time awakens in the cellular and bodily matter of humans, signaling that the Holocene human may not be fit for the new Earth. While *The Birth of the Robot* and *The Drowned World* give expressive form to

mobile arrangements of human, planet, and energy, neither work reflects the Anthropocene. The reciprocal relation between human power and planetary change in *The Birth of the Robot* makes Earth more easily inhabitable for petromodernity and its subjects; the incomplete dialectic between human and planet in *The Drowned World* figures humans as living archives of planetary history but incapable of shaping the planet for better or worse.

Aesthetic objects like those of Lye and Ballard indicate the multiple forms of ecological thinking occurring within artworks that do not reiterate ecological thought occurring in other domains. They sketch out something like a geoaesthetic, or a way of imagining the planet itself as intimately and inseparably related to human histories and futures. Lye's film, for instance, prefigures Kathryn Yusoff's idea of geologic life wherein humanity is not just empowered by fossil fuels, but is, in her words, "an expression of" them (784): "the geologic criss-crosses corporeality" (788) and "direct[s] what bodies become through the force of fossil matter-energy." In other words, human beings do not just put energy to use, but becoming human, or something other than just human, occurs through the forms of life energy enables, mutates, or prohibits. Lye and Ballard's aesthetic practices not only dissolve abstract boundaries between nature and culture; they offer images of worlds where nature is no longer the opposite of what is made but is both an object made by humans and a human-making force.

If Lye and Ballard indicate why, and how, we can profitably rethink midcentury aesthetics, they also urge us to take the invitation to think the Anthropocene and midcentury cultural production by way of sly disobedience: in terms of periodization, 1950 as a date for the Anthropocene's onset seems a tempting and convenient gift, but it is not one we should take. The periodizations of the geologists need not be ours; their forms of evidence are certainly not ours. I would say that now is the moment to argue for the value of literary thinking, for its disobedience, for its capacities to internalize conflicting ideas and forces, and, to follow Theodor W. Adorno, to recapitulate in mediated fashion the real antagonisms of the present. Perhaps now is the time to dwell with aesthetic particulars, to remind ourselves of the wayward thinking of art objects and to revalue the critical and conceptual acts that occur within them. If the call from scientists and humanists alike is that the Anthropocene demands new ways of thinking, of modeling scalar problems, of thinking the relation of particular to general, then literary thinking, and thinking about literature and culture, should not have to reinvent itself entirely.

Lye and Ballard suggest to us that an attunement to the mediated thinking of art objects can disclose for us alternative imaginings of the entangled webs of human histories and planetary futures.

Notes

1. Thanks to Robert P. Marzec for bringing this report to my attention. I first learned of it in his essay "Securing the Future in the Anthropocene: A Critical Analysis of the Millennium Ecosystem Assessment Scenarios."
2. Moore develops a range of new concepts—capitalocene, world-ecology, the double internality, cheap nature—but undertakes historical analysis that is typical of world-systems theory. Similarly, Tsing and Kawa put pressure on the concept of the Anthropocene in part through insights and stories gathered from ethnographic research. Research methods in the humanities and qualitative social sciences prove capacious and flexible enough to respond to the Anthropocene and to critique it.
3. See Chancel and Pikkety 15–19 for more on the history of carbon inequality and what such inequality means for the politics of addressing emissions.
4. In his analysis of Raymond Carver's "Elephant," Timothy Clark shows how reading at the planetary scale diminishes the human plot and the dominant political and moral readings of the story; however, by shifting scales, Clark reveals the agency of nonhuman actors in the story. His point, though, is not that we swap out one scale to pursue another, but that by engaging in multiscalar reading we might better capture the ways literature configures humans and nonhumans.
5. Smythe reads *The Birth of the Robot* alongside Lye's output from the 1930s. In his analysis, the relationship of technology and the body in this film is out of step with Lye's *oeuvre*. What Smythe sees as the film's utopian reconciliation of technology and nature, however, was one of Lye's longstanding preoccupations.
6. For more on the early history of Shell's use of art in its advertising campaigns, see Hewitt 121–39.
7. For more on the intellectual genealogy of Paul and Anne Ehrlich's *The Population Bomb* and the growing public interest in population after World War II, see Desrochers and Hoffbauer 37–61.
8. The phrase seems to refer more simply to a character's point of development: "Maitland had met her in the zone of transit between then and her present phase" (*Wind from Nowhere* 12).

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