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# The “bare germs of things to come”: H. G. Wells’s Utopias, Ecological Risk, and the Anthropocene

By David Shackleton

Recent fiction that portrays future climate-changed worlds might be seen as the foremost cultural expression of what the sociologist Ulrich Beck calls the “speculative age.” For Beck, such an age began as “risk society” emerged with recognition of the unprecedented dangers that modernity brought about as well as its benefits; this reflexive phase of modernity is characterized by a transition of concern from the production and distribution of wealth, to the production and distribution of risks.<sup>1</sup> Certainly, much recent speculative fiction bears a striking resemblance to the future scenarios that are widely used to articulate environmental risks, such as the climate change scenarios that the Intergovernmental Panel on Climate Change (IPCC) has employed in its reports since 1990. For example, the special report *Global Warming of 1.5°C* (2018) develops four model pathways (see figs. 1 and 2), which use storylines backed up by quantitative models to represent how global warming could be limited to 1.5°C above pre-industrial levels by the year 2100.<sup>2</sup> Supporting Beck’s theory of the turn to a risk society, such projections play an increasingly important role in assessing environmental risks and generating policy for action.

[insert fig. 1]

[insert fig. 2]

It might seem that modernism has little to do with such a speculative age. After all, Beck contends that risk society emerged only in the second half of the twentieth century. And undoubtedly, many of the works that are now considered to be modernist preceded the

growing concerns about nuclear war, pesticides, and climate change that drove mainstream environmentalist movements from the 1960s onwards. However, H. G. Wells's utopias already registered the unprecedented dangers of modernity, and helped initiate the speculative age. Hinting at the role literature plays in how we understand risk, Beck emphasizes that risks are "particularly open to social definition and construction": they can be "changed, magnified, dramatized or minimized within knowledge" (23; emphasis removed). Wells's utopias participate in such a construction: combining his interests in biology and ecology with an aesthetic form capable of mediating complex systems on a planetary scale, they produce knowledge of ecological risk. Notably, they produce knowledge about the ecological risks of global pandemics—such as the influenza pandemic of 1918 and the coronavirus pandemic of 2019—and species extinctions, such as those which are now deemed to constitute the sixth extinction.

By producing knowledge of environmental risk, Wells's utopias refigure historical time. Darko Suvin and Fredric Jameson famously argue that literary utopias and science fiction allow the apprehension of the present as history through estrangement and defamiliarization: for Jameson, they function to "defamiliarize and restructure our experience of our own present."<sup>3</sup> However, Wells's utopias restructure our experience not simply by disclosing our entrapment in the ideological prison-house of the present, but by producing knowledge about risk.<sup>4</sup> Playing on contemplative and anticipatory senses of speculation, Beck portrays risk society as marking the dawn of a "speculative age" in which, through anticipation of future hazards, people's experience of the present is changed. Through a "double gaze" it becomes possible to view the "second reality" or "shadow kingdom" of risk that lies concealed behind the visible world (72–73). The revelation of this second reality is what Wells's utopias—and the feigned futures of speculative fiction more generally—bring about. If this revelation can be described as an estrangement or defamiliarization of the

present, it is one that operates by distending the present in anticipation of future harms: by shaping what Reinhart Koselleck calls the “horizon of expectation,” it inflects the historical time of modernity.<sup>5</sup> Although Wells’s utopias provide a form in which the ecological risks of modernity start to become visible, it is their failure to imagine convincing mega-hazards and their solutions that most effectively defamiliarizes the historical present of modernity, revealing it to be one saturated with unknown and incalculable ecological risk.

### **Visions of Ecological Management**

Wells was abidingly concerned with species extinctions, from his early essays and scientific romances to his later political writings, in which he repeatedly used the threat of human extinction to motivate his cosmopolitan political projects. In three of his utopias, *A Modern Utopia* (1905), *Men Like Gods* (1923), and *The Shape of Things to Come* (1933), Wells imagines societies in which humans overcome the threat of extinction to form a socialist world state that achieves efficient control over other species and the planet’s natural resources. In doing so, he mirrors the anthropocentrism and human exceptionalism of early ecological science, and anticipates some recent optimistic accounts of the Anthropocene.

[insert fig. 3]

In his early utopias, Wells drew on the biological training that influenced him so profoundly when he attended T. H. Huxley’s class at the Normal School of Science, recasting Huxley’s hope that humans might achieve ethical evolution by combatting the crude “struggle for existence.”<sup>6</sup> In his later utopias, as scholars such as Peder Anker, Christina Alt, and Caroline Hovanec have shown, Wells took inspiration from ecology, exploring the possibilities of ecological management.<sup>7</sup> In retrospect, it might seem that Wells could have

used his utopias to depict systems in which humans have been decentred or displaced—perhaps systems that resemble the “mesh” of interconnected beings described by Timothy Morton.<sup>8</sup> However, in practice this was not the case. Wells recenters humans at the level of the species, and increasingly explores the possibility that they could master their environment in a manner that reflects early ecology, which, as Alt points out, displayed “a new confidence—even arrogance—in humanity’s ability to exert control over the natural world” (25).

Wells imagines utopias in which humans have gained control over other species, protecting some and deliberately exterminating others. In *Men Like Gods*, Mr. Freddy Mush—an aesthete with a sentimental regard for what he calls the “balance of nature”—objects that there were “no swallows to be seen in Utopia because there were no gnats nor midges.” It transpires that “the attention of the Utopian community had been given to the long-cherished idea of a systematic extermination of tiresome and mischievous species.”<sup>9</sup> This scenario develops that of *The Time Machine* (1895), in which “the air was free from gnats” and diseases have apparently been stamped out. In this early romance, the eradication is ambiguous: the Traveller is not able to reconstruct the full story of what has happened, partly because he “had no convenient cicerone in the pattern of the Utopian books.”<sup>10</sup> It is unclear whether the attempt to control the environment has benefitted the future society, or contributed to its demise. However, in *Men Like Gods* there *are* cicerones in the form of the Utopians, and the issue is discussed at length. Mr. Barnstaple is able to establish, for instance, that certain species have been conserved and modified: large animals have been turned into “pets and ornaments,” and the “almost extinct elephant had increased again and Utopia had saved her giraffes” (Wells, *Men Like Gods*, 87). Both of these scenarios explore Huxley’s recommendation that humans “subdue nature” in order to evolve ethically, which he illustrates with the example of a garden in which “hygienic precautions” would check or

remove the natural causes of disease, and “every plant and every lower animal should be adapted to human wants” (*Evolution*, 83, 19–20). Indeed, Wells echoes Huxley’s conceit of the garden in *The Time Machine* with his depiction of the future world as a “long-neglected and yet weedless garden,” and in *Men Like Gods* with his description of the “weeding and cultivation of the kingdoms of nature by mankind” (*Time Machine*, 27; *Men Like Gods*, 87). Huxley’s ideal of ethical evolution is underpinned by an assumption that is replicated most clearly in *Men Like Gods*: that humans hold the greatest value, and all other species should be subordinated to their needs.

Wells’s engagement with early ecology gave new impetus to his vision of controlling the environment. Anker has drawn attention to this engagement, and to the significant role that Wells played in popularizing ecology through the co-authored textbook *The Science of Life* (1929–30) (*Ecology*, 110–6). For example, Julian Huxley, the grandson of T. H. Huxley and himself a prominent figure in the Oxford school of ecology, reviewed *Men Like Gods* enthusiastically as an ecological utopia and praised its depiction of the “purging of the organic world.”<sup>11</sup> Later, Wells invited Huxley to collaborate with him on *The Science of Life*. Wells edited the chapters on ecology that Huxley wrote, which conclude with a section that considers the promise and dangers of “applied biology.”<sup>12</sup> Although Wells had long been exploring the possibility of controlling the environment as part of a project influenced by T. H. Huxley’s ethical evolution, the science of ecology inspired him further, and he went on to explore the possibilities of ecological management in *The Shape of Things to Come* (1933).

*The Shape of Things to Come* draws explicitly on ecology in its depiction of a modern state that has gained control of life. In telling the history of the world until the year 2106, Dr. Philip Raven identifies the start of a new Age of the Modern State in 2059:

From the point of view of the ecologist the establishment of the Modern State marks an epoch in biological history. It has been an adaptation, none too soon, of our species to changing conditions that must otherwise have destroyed it.<sup>13</sup>

This new epoch was made possible by “applied biology” and a “spate of biological invention” that led to the creation of new flora and fauna:

We may have new and wonderful forests; we may have new plants; we may replace the weedy and scanty greensward of the past by a subtler and livelier texture.

Undreamt-of fruits and blossoms may be summoned out of non-existence. (Wells, *Shape of Things*, 398)

In addition to the creation of new species, existing ones are kept in Major Parks that have been established as reserves for “various specially interesting faunas and floras” to “flourish without human interference” (395).<sup>14</sup> Advances in mineralogy and meteorology have led to other major changes: the former enabled the extraction of mineral substances that previously lay hidden deep in the earth, while the latter made possible “alterations in the composition and movements of the atmosphere,” complementing a drive to clean up “[i]ndustrial enterprises that formerly befouled the world with smoke, refuse and cinder heaps” (Wells, *Shape of Things*, 397, 399). “Geogonic” plans to remodel the contours of the earth have been drawn up, with the ambition of increasing the number of desirable habitats on the planet by a “redistribution of rainfall, a change in the fall of the surface waters, protection from winds” (400). Although these plans have not yet been implemented because of their danger, the planet already looks markedly different from the air. In contrast to the “Age of Frustration,” in which the earth was scarred and disfigured by long wars, it has since been enriched with vegetation and turned into a “world garden” (389–90).

Throughout his utopias, Wells advertises the great opportunities for humans if they could channel their agency through a cosmopolitan world state. In *The Shape of Things to Come*, he portrays the formation of a socialist World-State as necessary to control the “mercenary enterprise” that is blamed for the disasters of war and disease which threatened humans with extinction in the twentieth century (397). Similarly, in his late nonfiction writing, Wells becomes increasingly critical of the environmental damage wrought by private enterprise. For example, in *The New World Order* (1940), he decries the fact that the “institution of the private appropriation of land and natural resources, and of private enterprise for profit . . . have been expanded to a monstrous destructiveness”:

The new power organizations are destroying the forests of the world at headlong speed, ploughing great grazing areas into deserts, exhausting mineral resources, killing off whales, seals and a multitude of rare and beautiful species . . . and devastating the planet.<sup>15</sup>

The alternative to such destruction, he argues, is the collective control of economic and biological life by a socialist world state. Such a socialism—which Wells distinguishes sharply from Marxism, to which he was abidingly hostile—would employ new sciences such as ecology to achieve the more efficient management of the planet and its resources. Wells’s use of the threat of human extinction to motivate a cosmopolitan world state parallels Beck’s contention that the unprecedented risks of modernity create new global “risk communities,” and thereby open new possibilities for political organization and action that undermine the borders of traditional nation states. The “potential for self-endangering developed by civilization in the modernization process,” Beck contends, “makes the utopia of a world society a little more real or at least more urgent” (*Risk Society*, 47).



Wells's visions of human agency resemble some recent accounts of the Anthropocene. In *The Fate of Homo Sapiens* (1939), he anticipates Anthropocene discourse by drawing attention to the traces that humans will leave in the geological record through their destructive agency. Returning to his favored theme of the extinctions that are registered in the geological record, he points out that:

[T]o-day we are, from the geological point of view, living in a phase of exceptional climatic instability, in a series of glacial and interglacial ages, and witnessing another destruction of animal and plant species on an almost unparalleled scale. The list of species extinguished in the past hundred years is a long one; the list of species threatened with extinction to-day is still longer. . . . [T]his time the biologist notes a swifter and stranger agent of change than any phase of the fossil past can show—*man*, who will leave nothing undisturbed from the ocean bottom to the stratosphere, and who bids fair to extinguish himself in the process.<sup>16</sup>

Wells's view of “man” as a destructive “agent of change” finds its counterpart in the agency that he accords to humans—following Huxley's conception of ethical evolution and later reinforced by the confidence of early ecology—to control their environment and secure their evolutionary progression rather than extinction. Such a confidence is similar to that of certain optimistic narratives of the Anthropocene. Indeed, Edward Howell draws astute parallels between Wells's utopias and the discourse of “ecomodernists,” who see in human agency the potential for a “good Anthropocene” to be realized through technology. He shows that both are subject to similar criticisms: both tend to assign blame for environmental damage to the entire species rather than specific groups of humans; both allocate the task of correcting the species' course to an elite group of (male) scientific technocrats; and both advocate dangerous and hubristic geoengineering projects.<sup>17</sup> In this manner, Wells's optimistic visions

of human agency might be held as a warning about some recent strains of environmentalism. However, the value of Wells's utopias lies less in their proposed solutions, than in the ability of their aesthetic form to produce knowledge about ecological risk.

### **Utopian Form and Ecological Risk**

The ability of Wells's utopias to dramatize ecological risk is an affordance of their literary form. Benjamin Morgan argues that in the late nineteenth century, writers such as Samuel Butler and William Morris shaped the utopia into a literary form that is capable of mediating totality by its use of spatial closure to represent complex interlocking systems that must be conceived at multiple scales simultaneously.<sup>18</sup> In line with the formal expectations of the genre, Wells's utopias rely on spatial closure. *A Modern Utopia* involves the transition to a similar planet far away in the deeps of space, and *Men Like Gods* employs a slightly more elaborate mixture of Einstein and multiple dimensions to allow Mr. Barnstaple and a motley collection of Earthlings to be transported to a planet in a parallel universe.<sup>19</sup> The thresholds that must be crossed to reach the utopian planets function like the deep channel that separates Thomas More's island of Utopia from the mainland, with the difference that Wells's boundaries allow the depiction of systems that operate on planetary scales. As Wells stresses in *A Modern Utopia*, while previous utopias were content to use a mountain valley or an island to achieve sufficient isolation, "[n]o less than a planet will serve the purpose of a modern Utopia."<sup>20</sup> This use of spatial closure activates what Morgan describes as the "ecological possibilities of utopian form" ("Ecology," 141).

While the use of spatial closure enables the representation of complex systems as a whole, Wells was keen to make these systems reflect biological change. Complementing his view that any post-Darwinian utopia "must be not static but kinetic," the narrator of *A Modern Utopia* flags that he will portray a society that constantly needs to adapt to changing

conditions: “[w]e are to shape our state in a world of uncertain seasons, sudden catastrophes, antagonistic diseases, and inimical beasts and vermin” (Wells, *A Modern Utopia*, 5, 7).

Indeed, having flagged the threat of epidemics that refuse to respect the “boundary lines” of states in *A Modern Utopia*, Wells depicts such hazards in his later utopias (11). An epidemic unexpectedly breaks out in *Men Like Gods* when the visitors introduce “measles” and “a long suppressed influenza” to which the Utopians have no immunity (153). Again, the narrator of *The Shape of Things to Come* records how waves of influenza, cholera, bubonic plague, and maculated fever—collectively known as “the great pestilence”—struck in the 1950s in the aftermath of a world war, and halved the population of the world (219–22).

Wells’s use of utopian form to depict complex systems on a planetary scale parallels the ambition of early ecologists to map ecological systems—whether conceived of as “life-communities” or “ecosystems”—on similar scales.<sup>21</sup> In this respect, they resemble the examples discussed in *The Science of Life* of mapping life-communities on “the grand or planetary scale”: “with sufficient knowledge and patience, we could make a map of the whole world showing the distribution of life-communities as it was at a particular instant” (Huxley and Wells, *Science of Life*, 3:591–92). Or, given that Wells’s utopias are kinetic, they more closely resemble the mapping of ecological systems through time that is imagined in *The Science of Life* with the fanciful example of an ecologist who stays aloft in a balloon for hundreds of years, and observes changes in life-communities (3:659–61).<sup>22</sup>

While literature and science both provide the means of representing ecological transformations on a planetary scale, being set in the future makes Wells’s later utopias particularly effective at dramatizing ecological risk. Beck emphasizes that the “center of risk consciousness lies not in the present, but *in the future*,” and so risk society is one in which “the past loses the power to determine the present” and its “place is taken by the future” (*Risk Society*, 34). He hints at the role that literature can play in such a society when he

characterizes this future as something “non-existent, invented, fictive,” and suggests that we must project threats “in order to determine and organize our present actions” (34). Wells’s utopias are notable literary attempts to project ecological threats in this manner: by anticipating future hazards such as pandemics, they facilitate the “risk consciousness” that characterizes Beck’s risk society. Whereas *A Modern Utopia* depicts a utopia set on a distant planet, *Men Like Gods* portrays a utopian society in a parallel universe that is about three thousand years ahead, and *The Shape of Things to Come* traces future events up until the year 2106. The later utopias thereby constitute part of Wells’s “discovery of the future,” which began with his *Anticipations* (1901). Reflecting back on his career, Wells placed his new concern with the future at the forefront of “an almost complete reorientation . . . of our minds with regard to time.” Until “the later-Victorian period,” he contends, people had been predominantly preoccupied with the past, whereas now “[e]verything we do is becoming preparatory and anticipatory. To-day has vanished almost completely in our enormous preoccupation with to-morrow” (*The Fate of Homo Sapiens*, 82–4). Although happening at an earlier date, this shift of temporal orientation parallels that which Beck sees as happening in risk society.

Beyond anticipating future hazards such as pandemics, Wells’s utopias envisage ways in which such risks might be managed. For example, when the epidemic breaks out in *Men Like Gods*, the utopian society responds quickly. Unlike the disease that destroys the Martians in *The War of the Worlds* (1897) and the influenza pandemic of 1918, the epidemic is efficiently suppressed by “the science and organization of Utopia”: the visitors are quarantined, and a cure is swiftly found (Wells, *Men Like Gods*, 234). In *The Shape of Things to Come*, the account of a society in the form of a “Short History of the Future” similarly allows the portrayal of ecological risks and their management (Wells, *Shape of Things*, 14). After the great pestilence leads to disastrous consequences for a “disunited humanity” in the

Age of Frustration, the unified World-State successfully mitigates ecological risks in the new age which begins in 2059 (218). The narrator reports how, after the nineteenth and twentieth centuries which “show us mankind scrambling on the verge of irreparable disaster,” the threatened species “did not fall back into [the] abyss of extinction,” but “clambered past its supreme danger phase” to reach a level of safety that “no living substance has ever attained before” (428).

By speculating on things to come, Wells’s utopias reveal ecological risks that would otherwise remain invisible. Amitav Ghosh faults the realist novel for focusing on detailed descriptions of everyday life while banishing improbable events, such as the storms, floods, and unusual weather events that are occurring more frequently during the current climate crisis. “Here, then, is the irony of the ‘realist’ novel,” Ghosh writes: “the very gestures with which it conjures up reality are actually a concealment of the real.”<sup>23</sup> By endeavoring to imagine the future, Wells’s utopias depart from the realist novel—and indeed from other modernist novels, insofar as they turn from the materialism of realist novels to plumb the depths of consciousness. Yet by doing so, Wells’s narratives develop the faculty of risk perception—one that allows readers to see behind the visible surfaces of the realist novel—and reveal what Beck calls the “second reality” of risk that lies concealed behind the visible world.

Paradoxically, however, it is the representational failures of Wells’s utopias that best convey the unprecedented ecological risks of modernity. The utopias bend and buckle under the representational demands that are placed upon them, and their totalizing drive soon brings them up against their representational limits. Indeed, *A Modern Utopia* explicitly draws attention to its “conflicting form,” in which the two squabbling travelers at times distract from the utopia that is “too great for their sustained comprehension”: the effect is like watching a “rather defective” cinematograph lantern, which “sometimes jams and sometimes

gets out of focus” (Wells, *Modern Utopia*, 373, 3; emphasis removed). These difficulties are compounded when the utopia is set in the future. Wells held that “the best sort of futurist story should be one that sets out to give you the illusion of reality,” but acknowledged that this illusion is difficult to sustain. Unlike the historical novelist who “has a whole mass of history, ruins, old costumes, museum pieces, to work upon and confirm him,” the “futurist writer has at most the bare germs of things to come” (Wells, *Literary Criticism*, 247). The epidemics in *The Shape of Things to Come* are a case in point. They produce an illusion of reality—they generate what might be called an “ecological reality effect”—although this illusion quickly falters. Notably, the text’s account of maculated fever flags its own deficiencies. Unlike the diseases that preceded it, the narrator suggests that this fever is poorly understood: it seems to have been transmitted from captive baboons to humans, possibly with an intermediary, although “[w]e are still quite in the dark upon these points because at that time there were no doctors or biologists with the leisure to record observations.” A host of tentative hypotheses are advanced, but due to the “dearth of detailed description” the disease remains “obscure” and a “riddle for pathologists”: it “swept the whole world and vanished as enigmatically as it came” (Wells, *Shape of Things*, 169).

[insert fig. 4]

The failure to portray a convincing pandemic is even more pronounced in the 1936 film adaptation *Things to Come*. Wells himself comments on the shortcomings of the adaptation, noting that it goes from scenes of “intense realism” to scenes of “the intensest detailed improbability.” Although he suggests that “the final and conclusive defeat of futuristic imagination” lies in “the small material details” such as those of costume, hair, and

furniture in the year 2035, this defeat was already apparent in the earlier epidemic scenes (*Literary Criticism*, 249–50). The film lurches into a melodramatic or expressionist horror mode more reminiscent of some of the films that the producer Alexander Korda made in Berlin in the 1920s, as infected people (such as the woman depicted in fig. 4) roam around like zombies during “The Wandering Sickness.” This generic discontinuity, combined with the resort to an intertitle that announces that the sickness has killed more than half of the human race, inadvertently achieves a similar result to that which Wells notes when he compares his earlier utopia to a moving picture projected by a defective cinematograph lantern.

When the utopias fail to be convincing—without lapsing into the sort of knowing irony that Wells discerns as another approach to fiction of the future—they best convey ecological risk (*Literary Criticism*, 248). Here, the form of Wells’s utopias cuts against their content: their faltering narratives undermine their visions of ecological management and control. Beck points out that the risks of modernity are unknowable in the sense that they relate to future hazards that have not been directly experienced, and when hazards do occur, they are often on such vast scales that they defy representation: the unintended consequences of modernity now “endanger *all* forms of life on this planet” (*Risk Society*, 72, 22). Wells’s utopias provide a literary form in which such risks start to become visible, yet it is their representational failures—their failures to imagine convincing mega-hazards—that best intimate the incalculable and uncontainable ecological risks of modernity.

## Notes

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<sup>1</sup> Ulrich Beck, *Risk Society: Towards a New Modernity*, trans. Mark Ritter (London: Sage, 1992).

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<sup>2</sup> IPCC, *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*, ed. Valérie Masson-Delmotte et al (Cambridge: Cambridge University Press, 2018), 13–14, [ipcc.ch/sr15](http://ipcc.ch/sr15).

<sup>3</sup> Fredric Jameson, *Archaeologies of the Future: The Desire Called Utopia and Other Science Fictions* (London: Verso, 2005), 286, emphasis removed. For Suvin, science fiction achieves cognitive estrangement by imagining alternative futures that force us to historicize the now as “the determinate past of something yet to come”: see Darko Suvin, *Metamorphoses of Science Fiction: On the Poetics and History of a Literary Genre* (New Haven: Yale University Press, 1979), 7–8.

<sup>4</sup> Jameson suggests that “at best Utopia can serve the negative purpose of making us more aware of our mental and ideological imprisonment” (*Archaeologies*, xiii).

<sup>5</sup> Reinhart Koselleck, *Futures Past: On the Semantics of Historical Time*, trans. Keith Tribe (Cambridge, MA: MIT Press, 1985), 259–61.

<sup>6</sup> Thomas H. Huxley, *Evolution & Ethics and Other Essays* (London: Macmillan, 1894), 83.

<sup>7</sup> See Peder Anker, *Imperial Ecology: Environmental Order in the British Empire, 1895–1945* (Cambridge, MA: Harvard University Press, 2001); Christina Alt, “Extinction, Extermination, and the Ecological Optimism of H. G. Wells,” in *Green Planets: Ecology and Science Fiction*, ed. Gerry Canavan and Kim Stanley Robinson (Middletown, CT: Wesleyan University Press, 2014), 25–39; and Caroline Hovanec, *Animal Subjects: Literature, Zoology, and British Modernism* (Cambridge: Cambridge University Press, 2018).

<sup>8</sup> Timothy Morton, *The Ecological Thought* (Cambridge: Harvard University Press, 2010), 28–50.

<sup>9</sup> H. G. Wells, *Men Like Gods* (London: Cassell, 1923), 84–5.



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<sup>10</sup> H. G. Wells, *The Time Machine*, ed. Roger Luckhurst (Oxford: Oxford University Press, 2017), 33, 48.

<sup>11</sup> Julian Huxley, “Men Like Gods,” *Nature* 111, no. 2792 (1923): 591–4, 592.

<sup>12</sup> H. G. Wells, Julian S. Huxley and G. P. Wells, *The Science of Life: A Summary of Contemporary Knowledge about Life and its Possibilities*, vol. 3 (London: Cassell & Co., 1931), 613–15.

<sup>13</sup> H. G. Wells, *The Shape of Things to Come: The Ultimate Revolution* (London: Hutchinson, 1933), 428.

<sup>14</sup> This combination of applied biology and preservation reflects the approach of Oxford ecologists who, according to Anker, “endorsed both romantic environmental preservation and hard-core ecological management” (*Ecology*, 110).

<sup>15</sup> H. G. Wells, *The New World Order* (London: Secker & Warburg, 1940), 35.

<sup>16</sup> H. G. Wells, *The Fate of Homo Sapiens* (London: Secker & Warburg, 1939), 29–30.

<sup>17</sup> Edward H. Howell, “Modernism, Ecology, and the Anthropocene” (PhD diss., Temple University, 2017), 204–6, 236–8. One difference is that while ecomodernists advocate the “aggressive participation of private sector entrepreneurs” to accelerate the technological change that is supposedly needed to make a “great Anthropocene,” Wells highlights the destructive impact of private enterprise and argues for its regulation by a socialist world state. See John Asafu-Adjaye et al., *An Ecomodernist Manifesto* (2015), 30, [ecomodernism.org/manifesto-english](http://ecomodernism.org/manifesto-english).

<sup>18</sup> Benjamin Morgan, “How We Might Live: Utopian Ecology in William Morris and Samuel Butler,” in *Ecological Form: System and Aesthetics in the Age of Empire*, ed. Nathan K. Hensley and Philip Steer (New York: Fordham University Press, 2019), 139–60.

<sup>19</sup> The discussion of multiple dimensions is both an example of “an ingenious use of scientific patter” to introduce the “impossible hypothesis” that Wells flagged as his innovation in

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writing fantastic stories, and marks a threshold or boundary that allows Wells to construct his utopia as a totality (*H. G. Wells's Literary Criticism*, ed. Patrick Parrinder and Robert M. Philmus [Brighton: Harvester, 1980], 241–42).

<sup>20</sup> H. G. Wells, *A Modern Utopia* (London: Chapman & Hall, 1905), 11.

<sup>21</sup> The term “life-community” is used in *The Science of Life* (3:584); Arthur Tansley coined the term “ecosystem” in 1935 (see Anker, *Ecology*, 154).

<sup>22</sup> In *The Science of Life*, it is stressed that “it is not enough to think of life-communities in [a] fixed and static way, for they are constantly changing” (3:592). More sophisticated techniques are now used to model ecological systems through time. See E. M. Wolkovich, B. I. Cook, K. K. McLauchlan, and T. J. Davies, “Temporal Ecology in the Anthropocene,” *Ecology Letters* 17 (2014): 1365–79.

<sup>23</sup> Amitav Ghosh, *The Great Derangement: Climate Change and the Unthinkable* (Chicago: University of Chicago Press, 2016), 23.