



# ECOCENE

CAPPADOCIA JOURNAL OF ENVIRONMENTAL HUMANITIES



Volume 1/ Issue 1/June 2020

Environmental Humanists Respond to the World Scientists' Warning to Humanity



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Woods, Derek. 2020. "Simon L. Lewis and Mark A. Maslin's *The Human Planet: How We Created the Anthropocene*," review of *The Human Planet: How We Created the Anthropocene*, by Simon L. Lewis and Mark A. Maslin. *Ecocene: Cappadocia Journal of Environmental Humanities* 1, no. 1 (June): 154-60. <https://doi.org/10.46863/ecocene.47>.

Book Review/ Received: 10.06.2020 /Accepted: 13.06.2020

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## Book Review: Simon L. Lewis and Mark A. Maslin's *The Human Planet: How We Created the Anthropocene*

by Derek Woods



### *About the Author*

Derek Woods is assistant professor of media studies in the Department of English Language and Literatures at the University of British Columbia. He writes about ecology, technology, and modern narrative in relation to the history of science. His book in progress is about the distinction between harmful and "symbiotic" technologies and the influence of cybernetics on ecology and Earth system science. *What Is Ecotechnology?* shows that the terrarium and terraforming are topoi across literature, science, and film that shape ecological subjectivity and visions of what green technology might become. Recent publications can be found in *diacritics*, *American Literary History* and the collection *Anthropocene Reading: Literary History in Geologic Times*.

## Book Review

*Derek Woods*

Lewis, Simon L., and Mark A. Maslin. 2018. *The Human Planet: How We Created the Anthropocene*. London: Pelican.

There is something tidy, even dialectical, about the narrative of a species evolving “to” transform a planet so radically that it departs from natural cycles that take place on geological time scales, then becoming self-aware as a geological force, then deciding to use this power for good—for justice and equality, for biodiversity, and for a stable climate. To their credit, Simon Lewis and Mark Maslin are not so tidy. But the detailed argument of *The Human Planet: How We Created the Anthropocene* does follow this arc.<sup>1</sup> From an overview of geological time, the authors move from early human evolution to hunter gatherers, the origins of agriculture, the rise of colonial capitalism, the industrial revolution, the acceleration of human impacts through the twentieth century, and finally to possible futures: sustainability or civilizational collapse. The difference between this book and the tidy approach is that within the broad strokes of what Frédéric Neyrat (2019) (following Jean-François Lyotard) calls the “grand narrative” of the Anthropocene, Maslin and Lewis provide micro-details that sometimes overflow the bounds of this narrative, sometimes add to its complexity, and generally give readers an honest (that is, uncertain) account of Anthropocene debates within the sciences (2). So readers versed in global environmental history, or Anthropocene writing in the environmental humanities, or the sciences of climate change (or all of the above) can all learn something from the book. *The Human Planet* avoids a one-note focus that would stress only the sciences or only the implications for history.

As with all omnivorously transdisciplinary work, this breadth makes it hard to answer the question an older scholar once asked me about an essay of my own: who will evaluate it? In the case of *The Human Planet*, the answer is that no one is likely to have micro-detailed expertise necessary to check every fact. Perhaps that should lead us to take the book’s claims with a grain of salt, even though they are well-fortified by references to scholarship and scientific research from many fields. When Lewis and

Maslin's broad argument veered into to an area I know in detail, the emergence of the germ theory of disease, they mistakenly argue that the germ theory was "widely accepted" from the 1850s, when broad acceptance was only in its early stages with John Snow's work on cholera ([1854] 1855). Consensus awaited the work of Louis Pasteur, Robert Koch, and others. Until the 1890s, the germ theory was controversial.

But unless this review were composed by authors from many fields, there is a problem of expertise that should be carefully marked in our "post-truth" moment when "infowhelm" dovetails badly with low levels epistemological literacy, and one needs to be more careful than ever about sources of knowledge. But the fact that Maslin and Lewis have both participated in science's own turn toward interdisciplinarity does have upsides for the environmental humanities as a nascent field struggling for purchase in the universities. For example, throughout *The Human Planet* the authors cite humanities scholars, especially historians. This welcome development in academic science writing seems to be an effect of the scope of a topic that so clearly mixes human history with natural history. When the undeniably greater epistemic authority of scientists amplifies and legitimates the voices of anti-capitalist theorists such as Jason Moore, then we have arguably begun to experience a different relation between the sciences and humanities from the one that persisted, say, between the publication of C.P. Snow's *The Two Cultures* (1959) and the "Science Wars" of the 1990s. Lewis and Maslin could have cited more women and scholars of color, but the fact that they cite any politicized humanities work in the first place distinguishes them from the majority of scientists and popularizers of science.

One way to accommodate the problem of expertise in this review is to discuss how *The Human Planet* treats core theoretical questions instead of evaluating the factual argument point-by-point. This is the approach I have chosen for a text that would require a committee to evaluate in detail. First, a more detailed overview of its topics.

*The Human Planet* follows the narrative arc of the Anthropocene I mentioned above, but with important differences that appear in the book's most nuanced chapters. For example, readers who have been following the Anthropocene literature will know that Lewis and Maslin put forward the Orbis hypothesis for the origin of the human epoch.<sup>2</sup> The Orbis spike is a *decline* rather than a rise in CO<sub>2</sub> levels that took place during the 16<sup>th</sup> century, following the first arrival of Europeans in the Americas. As is well known, indigenous peoples had no immunity to the microbes that accompanied the European colonists and conquerors—especially smallpox. During this epidemiological genocide which coincided with war, up to 76 million people died between 1493 and 1650 (158). The Aztec, Inca, and Maya civilizations collapsed (154; 155; 336). By the time colonists arrived in greater numbers, they encountered an emptied and de-forested continent and

assumed they were dealing with land that had never been used for agriculture. According to Lewis and Maslin, what they were seeing was the aftermath of a devastating epidemic. In this theory, resurgent trees fixed the missing CO<sub>2</sub>.

So in their account of the emerging Anthropocene, Lewis and Maslin place strong emphasis on this early period of colonial globalization, which also includes the “Columbian exchange” of organisms between Europe and North America. In some parts of the book, they argue that these centuries led to significant climate changes in their own right, including the early modern “Little Ice Age.” Such changes were brief exceptions to agriculture’s long-term trend of warming the climate and forestalling the next ice age. In other parts of the book, they stress that we cannot know for sure whether or not these pre-industrial impacts were enough to have “radically changed the Earth as an integrated system” (117; 179). Rather than treating these impacts as origins, they argue that these uncertainties about pre-industrial impacts complicate the project of defining the Anthropocene’s start date—a project that should not be restricted to geology but should “range across” Earth system science, geology, archaeology, conservation, evolutionary biology, and human history (77). In so doing, they argue that agriculture and the Columbian “exchange” were conditions of possibility, not origins, for the definitive Earth system mutations caused by industrialization and fossil fuels.

In ways that cannot be said of all Anthropocene discourse, colonialism and the globalization of capitalism are central to how Lewis and Maslin explain the climate-historical condition of the twenty-first century, which has drawn humanities scholars to their work. The Anthropocene has been a controversial concept across the environmental humanities, but for different reasons than in the natural sciences. In the humanities, the main problem is the subject of the Anthropocene: there is no universal human; we may be a species, but in terms of history and culture “we” are many fragmentary worlds jarred together in globalized flows of energy, capital, data, life. The Anthropocene might create apocalyptic anxiety for some. But as Kyle Powys Whyte (forthcoming) argues, indigenous peoples in the Americas have been living with the end of their world for centuries.<sup>3</sup>

While Lewis and Maslin make colonialism explicit in conversations about the Anthropocene, for Kathryn Yusoff their language of “exchange” codes colonial violence in a narrative of progress toward the globalized world, a narrative in which “the rupture of bodies, flesh, and worlds become[s] buried” (30). In a gloss of one of Lewis and Maslin’s articles, Kathryn Yusoff (2018) instead sees “systematic murder” and the extraction of value from humans treated as property to mark the early stages of globalization. For her, “as a descriptive project in the grammar of geology, this [Orbis]

spike naturalizes European colonial relations”—but, “the Anthropocene cannot dust itself clean from the inventory of which it was made” (32).

*The Human Planet* does do more decolonial work than many books on the topic. For example, in a conceptually precise book on the Earth system view of the human epoch, Clive Hamilton (2017) works to separate early colonial climate impacts from those that began in the nineteenth century, pushing back against recent critiques of the Anthropocene subject’s universality. He pointedly argues that “from an Earth system viewpoint, there are no divisions between North and South or between nations, cultures, genders, and races. There are only humans with more or less power to disturb it. If the Anthropocene is a rupture in the history of the Earth as a whole, it is also a rupture in the history of humans as a whole” (34). Lewis and Maslin’s politics lie somewhere between this kind of claim and Yusoff’s critique of the whiteness of science.

The relatively young framework of Earth system science also shapes the argument of Lewis and Maslin’s book. Earth system science aspires to unite a wide range of disciplines insofar as they contribute to our understanding of the planet, especially its outermost layers, as a single “integrated system” that includes the lithosphere, biosphere, atmosphere, and hydrosphere along with human societies and technologies (269). Earth system science includes a strong dose of geology, but it has become a distinct field with ties to ecology and Gaia theory that become clear in its focus on how the complexity of planetary-scale life regulates the abiotic climate. Ironically, it was this interdisciplinary field that gave us the term Anthropocene, but geologists control access to the official geological time scale, and they have yet to adopt the new epoch formally despite anticipations that they would do so as early as 2016.

Like Hamilton and others, Lewis and Maslin adopt the language of function to define the Anthropocene in Earth-system terms. One phrase that repeats throughout is “the functioning of the Earth system.” It has the full conceptual weight of definition: “a good definition of the Anthropocene is the epoch where the human component of the Earth system is large enough to affect how it functions,” whatever the start date (399). Exploring this phrase in detail would be a good way to encapsulate how the form and content of *The Human Planet* interact, which would give us a case study in how the new conceptual framework of Earth system science alters the meaning of Lewis and Maslin’s more established, more narrative language of geology and environmental history.

What I can say for now is that the authors repeatedly zoom in and out between details of natural/human history and the logic of Earth system. For example, they note the consensus that agriculture arose not just in the “Fertile Crescent” but in at least fourteen separate regions where humans independently domesticated plants and

animals. From details such as the names and numbers of species domesticated, they shift scales, discussing the possibility that burning forests and other aspects of agriculture “could cause changes to the entire Earth system” (138). It does seem natural, given their definition of the Anthropocene, that Lewis and Maslin would keep bringing their concrete studies back to this planetary being and its “functioning.” But the pattern is informative because it shows a live process in the history of science: an effort to fit older disciplinary knowledges into a new paradigm. In a fugue-like structure, Lewis and Maslin repeatedly discuss statistics and traces in the Earth’s geological archive, then string them into detailed stories, then abstract it to the “complex system.” At one scale, we have things like ice cores and domesticated species; at the other, the scale of the Earth system, we have feedbacks, self-organization, tipping points, and flows of energy and information. Very often the Earth system concept flies stealth for a number of pages. Then it reappears at the end of a section or the beginning of a new chapter, or at a crucial juncture in the argument, as when the authors ask whether a given impact, however significant, has been enough to alter the “functioning” of the Earth system “as a whole” (410; 333). This pattern shows how the authors work with the difference made by this system’s strictly planetary scale—how they decide what qualifies as an Earth system mutation and what is a small-scale event that remains spatially and temporally contained in its implications.

In following these arguments, we learn more about what Earth system scientists mean by “function,” even if the concept remains fuzzy throughout Lewis and Maslin’s book. There is a lot more to learn about this young field, both for humanists observing from a distance and for scientists building models from fast-growing datasets. But if the Earth system has functions, it would seem to aim at certain “goals” by analogy with a machine that aims at goals intended by humans, or an organ that aims at evolved goals to maintain an organism, or an organism whose circular goal is itself. Planetary ecological function seems to refer to some persistent structure of relations between central concepts such as self-organization and feedback and the others mentioned above. This structure does not exist in the Earth system’s parts, but only in the baroque complexity of the living Earth as whole.

In conclusion, I return to the concept of grand narrative and the question of how to describe the *anthropos* of the Anthropocene. Certainly, *The Human Planet* is *longue durée* history or “big history,” to use two terms for sweeping works of history that could range from Ferdinand Braudel’s *Civilization and Capitalism* to Alfred Crosby’s *Children of the Sun*. Certainly Lewis and Maslin’s account of deep time is one of the most compelling aspects of the book. Despite the geological name, this is not always the case for work on the Anthropocene.<sup>4</sup> But the book is also grand narrative in the sense that it tries to

suture its many particulars into the totalizing language of complex systems. The stitching is not seamless. The gaps still show. The point is that the authors repeatedly suggest that the largest scale of order and (in)stability is the whole “integrated system,” the Earth system. Acknowledging that “there is no single entity called “humanity” that drives changes to our home planet,” they argue that the *anthropos* of the Anthropocene is “human societies” understood as “complex adaptive systems composed of many interacting parts” (332). Moreover, “using the tools of Earth system science to extend our understanding of changes to the human component of the Earth system has led us far into domains usually occupied by the social sciences. . . . Life on Earth has gone through energy and information processing revolutions, at each time fundamentally altering the Earth system” (363). So events in human history are considered major when they lead to shifts in the Earth system such as the advent of agriculture or the Great Acceleration of the twentieth century. No matter how we narrate them, such events are *ultimately*, in the widest frame, explained in the language of cybernetics and complex systems, which *re*-frames theories of history such as Marxism.

Gaps notwithstanding, the assumption here is that human and ecological history can be explained without loss by the language of complex systems theory. The authors are wary of the “ladder of progress,” but they left me with the impression that there is a pattern to history. History becomes more complex as time goes on; conversely, civilizational collapse would mean a “reduction in complexity” (360; 336). There are many questions to ask of complex systems theory. For now, I note that the language of complexity has become more and more common in the sciences. In some cases, this means a turn away from reductionism and toward holism. As this trend gains momentum, environmental humanities scholars should pay attention to how the complex Earth systems framework negotiates the problems of self-reference that arise as scientists include the observer in their object of study.

#### Notes

<sup>1</sup> Not to be confused with Jeff Gibbs’s and Michael Moore’s controversial documentary *The Planet of Humans* (2020), which runs counter to the cautious optimism with which Lewis and Maslin conclude their book. I cite Lewis and Maslin in parentheses throughout.

<sup>2</sup> See Simon L. Lewis and Mark A. Maslin’s (2015) “Defining the Anthropocene.”

<sup>3</sup> See for example “Geoengineering and Indigenous Climate Justice: A Conversation with Kyle Powys Whyte.”

<sup>4</sup> See Noah Heringman’s (2015) “Deep Time at the Dawn of the Anthropocene.”



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