Facing the Anthropocene

Fossil Capitalism and the Crisis of the Earth System

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APPENDIX

CONFUSIONS AND MISCONCEPTIONS

There is a history in green circles of blaming environmental problems on human beings as such. Our species has been labeled a plague, a virus, and a cancer, and compared to a swarm of locusts; we're told that people are nature's permanent enemy, that without radical population reduction all other environmental protection measures will certainly fail.

As Murray Bookchin wrote, neo-Malthusian greens blame environmental crises on "a vague species called humanity—as though people of color were equatable with whites, women with men, the Third World with the First, the poor with the rich, and the exploited with their exploiters."[1]

Given the prevalence of "blame people" views in conservative green circles, it not surprising that some radicals have reacted with suspicion to an epoch named for the *anthropos*, human beings. The following essays respond to two such concerns that have some currency on the left: the view that Anthropocene science blames all humanity for the planetary crisis, and the related assertion that scientists have chosen an inappropriate name for the new epoch.

1. Does Anthropocene Science Blame All Humanity?

It is clear that the world's poorest people are suffering most from climate change, and that their situation will get much worse if present trends continue. The injustice of that is especially appalling because, as study after study shows, the hardest hit are those who are least responsible. Stephen Pacala of Princeton University's

Environment Institute, for example, calculates that "the 3 billion poorest people . . . emit essentially nothing. . . . The development of the desperately poor is not in conflict with solving the climate problem, which is a problem of the very rich."[2]

That fact is so widely known and accepted that it is shocking to read the charge, made by some left-wing writers, that Anthropocene scientists blame people in general for global change—that "the Anthropocene narrative" views humanity as an undifferentiated whole and ignores differences between countries, classes, and institutions. For example:

- Keiran Suckling of the Center for Biological Diversity objects that the name identifies the cause of change as "humanity as a whole, rather than the identifiable power structures most responsible for the geological Anthropocene traces."[3]
- World-ecology theorist Jason Moore says that in the work of Anthropocene scientists, "the mosaic of human activity in the web of life is reduced to an abstract Humanity: a homogenous acting unit." He accuses them of treating "humanity as an undifferentiated whole" and offering "a meta-theory of humanity as collective agent."[4]
- Australian environmentalist Jeremy Baskin warns that "the Anthropocene label tends to universalize and normalize a small portion of humanity as 'the human of the Anthropocene.' . . . Impacts which have been driven by (and largely for the benefit of) a minority are attributed to all of humanity."[5]
- There's even been an Internet petition accusing geologists who support declaring a new Anthropocene epoch of "encouraging fatalism and myths about the wretchedness of human nature," and blaming environmental problems on "some essential 'human' quality."[6]

These would be serious charges, if they were true. It would mean that some of the world's most respected scientists are ignoring obvious facts. Worse, it would mean that those scientists are allied

with the reactionary populationists who propose to save the world by letting billions of people die.

Fortunately, it isn't true. The criticisms reflect preconceptions about what the Anthropocene concept *might* mean, rather than serious engagement with the work of the scientists who have defined it.

That is not to say there are no people-are-the-problem advocates writing about the Anthropocene. Scientists are no more immune to mistaken social views than anyone else, and the word has been adopted by people from many fields—poets, philosophers, musicians, literary critics, journalists, and more—who use the Anthropocene as a hook to hang their particular preconceptions on.

The real surprise is how few neo-Malthusian passages there actually are in the scientific literature about the Anthropocene. Population growth is frequently mentioned as one of a number of factors associated with the Great Acceleration, but rarely is it identified as the main problem, nor is population reduction promoted as the *sine qua non* of any effective response to global change.

Indeed, overpopulationist ideologues are among the most hostile *opponents* of the Anthropocene project. A case in point is sociologist Eileen Crist, a prominent advocate of global population reduction: she has written pages of purple prose denouncing "Anthropocene discourse" as "a human species-supremacist planetary politics"; as an example of "the human supremacy complex"; as a "time-honored narrative of human ascent into a distinguished species" that "delivers a familiar anthropocentric credo" and "crystallizes human dominion . . . viewing our master identity as manifestly destined, quasi-natural, and sort of awesome." These are reasons, she writes, "to blockade the word Anthropocene" before it catches on.[7]

As Jedediah Purdy writes, "The Anthropocene does not seem to change many minds, strictly speaking, on point of their cherished convictions. But it does turn them up to 11."[8]

If the critics were challenging common misunderstandings about or misrepresentations of the Anthropocene, they would be

on firmer ground, but they are not. They attack the entire field of Anthropocene study as inherently problematic, and attribute the people-are-the-problem view to specific scientists, including, by name, such leaders in the field as Paul Crutzen, Will Steffen, and Jan Zalaciewicz.

These critics are so convinced that natural scientists do not understand social issues that they fail to notice a substantial body of contrary evidence. If they actually read the scientific papers they cite in their footnotes, they must have been wearing ideological blinders.

For example, virtually every article on the Anthropocene mentions Paul Crutzen's 2002 article "The Geology of Mankind," which was the first paper on the subject published in a major journal. In it, Crutzen very clearly says that "these effects have largely been caused by only 25% of the world population."[9] One might question his statistics, or his social views in general, but it is obviously false to say that he treats humanity as an undifferentiated whole.

Crutzen's statement doesn't stand alone. The scientists in the forefront of the Anthropocene project have repeatedly and explicitly rejected any "all humans are to blame" narrative. The most authoritative book on the science of the Anthropocene, *Global Change and the Earth System,* includes passages such as these:

- "Present trends suggest that the gap between the wealthy and the poor is increasing almost universally, both within countries and between countries. . . . [Wealth differences] are often linked to different political economies and their effect on the ability of countries and locals to protect resources or enforce rules in their use. Wealth differences between countries have been shown to have significant impacts on resource use."[10]
- "An emphasis on the population variable can have the effect of blaming the victims (as in high fertility rates among economically marginal households in the tropical world) for consequences such as tropical deforestation and famine-malnutrition. In fact, modern famine and malnutrition are more

closely related to issues of food entitlements and endowments than to population growth."[11]

- "Population pressure and poverty have often been cited as the primary causes of tropical deforestation. However, a careful analysis of a large number of case studies across the tropics suggests that a more complex array of drivers including market and policy failures and terms of trade and debt are likely influences on the patterns and trajectories of land-use change in the tropics. As noted in one extensive review of the literature, forests fall because it is profitable to someone or some group."[12]
- "One-quarter of the world's population remains in severe poverty. Inequality has been increasing in many countries and between countries, and the interactions between poverty and the environment are of local, regional, and global significance."[13]
- "In a world in which the disparity between the wealthy and the poor, both within and between countries, is growing, equity issues are important in any consideration of global environmental management."[14]

A peer-reviewed article published in 2011, by some of the most prominent figures in Anthropocene science, is even clearer:

> The post-2000 increase in growth rates of some non-OECD economies (e.g., China and India) is evident, but the OECD countries still accounted for about 75% of the world's economic activity. On the other hand, the non-OECD countries continue to dominate the trend in population growth. Comparing these two trends demonstrates that consumption in the OECD countries, rather than population growth in the rest of the world, has been the more important driver of change during the Great Acceleration.
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> The world's wealthy countries account for 80% of the cumulative emissions of CO_2 since 1751; cumulative emissions are important for climate given the long lifetime of CO_2 in the atmosphere. The world's poorest countries, with a combined population of about 800 million, have contributed less than 1% of the cumulative emissions.[15]

If those examples aren't enough to disprove the charge that Anthropocene science blames all of humanity for the actions of a small minority, we can turn to two landmark papers published in 2015: the update to the Planetary Boundaries Framework and the update to the Great Acceleration statistics and graphs, discussed in chapter 4. The authors of the former wrote:

> The current levels of the boundary processes, and the transgressions of boundaries that have already occurred, are unevenly caused by different human societies and different social groups. The wealth benefits that these transgressions have brought are also unevenly distributed socially and geographically. It is easy to foresee that uneven distribution of causation and benefits will continue, and these differentials must surely be addressed for a Holocene-like Earth System state to be successfully legitimated and maintained.[16]

And in their update on the Great Acceleration, scientists associated with the IGBP wrote:

> In 2010 the OECD countries accounted for 74% of global GDP but only 18% of the global population. Insofar as the imprint on the Earth System scales with consumption, most of the human imprint on the Earth System is coming from the OECD world. This points to the profound scale of global inequality, which distorts the distribution of the benefits of the Great Acceleration and confounds efforts to deal with its impacts on the Earth System. . . .
>
> The Great Acceleration has, until very recently, been almost entirely driven by a small fraction of the human population, those in developed countries.[17]

I am not suggesting that the social analysis offered by Earth System scientists to date is complete, or even adequate: on the contrary, the problem of inequality is much more serious than even these passages suggest. Nevertheless, the charge that Anthropocene science as such blames all of humanity for the actions of a small minority and ignores inequalities of wealth and power simply doesn't hold water.

2. What's in a Name?

In one of Douglas Adams's *Hitchhiker's Guide to the Galaxy* books, a committee of marketing managers, stranded on a prehistoric planet, is unable to invent the wheel. Responding to a critic, the committee chair says, "Okay, if you're so clever, you tell us what color it should be!"

I'm reminded of that scene every time I read yet another article that responds to one of the most important scientific developments of our time, the Anthropocene, with the complaint that the scientists got the name wrong.

Never mind all that stuff about the Earth System changing in unprecedented and dangerous ways—*it needs a different name!*

The critics don't like the Greek root word *anthropos*, meaning human being—they fear it implies that every human on Earth is responsible for environmental destruction. Alternative suggestions include obvious jokes like Misanthropocene and Anthrobscene, and more serious proposals like Technocene, Sociocene, Homogenocene, Econocene, and Capitalocene.

So far as I can tell, none of these has been submitted to the Anthropocene Working Group, where they could be formally evaluated. But since the suggestions reveal misunderstandings about the word itself, and about the conventions used in naming geological epochs, a short discussion is in order.

To begin with, the Anthropocene is proposed as a new geological epoch, so its name should at least try to follow geology's naming conventions. The alternative proposals simply add a new

word in front of the suffix *-cene*, apparently believing that it means epoch or age, which it does not.

The suffix *-cene* comes from the Greek *kainos* meaning "recent." It was introduced by the nineteenth-century geologist Charles Lyell, who distinguished between various layers of rock by determining the proportions of extinct and non-extinct fossils each contained. Thus Miocene is from *meios—few* of the fossils are recent. Pliocene is from *pleios—more* of the fossils are recent. Pleistocene is from *pleistos—most* of the fossils are recent.

After the Pleistocene, Lyell added an interval that he simply called Recent, but in 1885 the International Geological Congress changed that to Holocene, from the Greek *holos*, for strata in which the fossils are *wholly or entirely* recent.

So, contrary to what is often said in magazine articles, Anthropocene does not mean Human Age or Human Era. It combines *kainos* with *anthropos*, meaning human being; so, following Lyell's approach, it means a time when geological strata are dominated by remains of recent human origin. Indeed, a key part of the ongoing Anthropocene debate among geologists concerns which such remains should be used to identify the new epoch. From the perspective of historical and physical geology, the name is appropriate.

In left-wing circles, the most often proposed alternative name for the new epoch is *Capitalocene*. Proponents argue that global change is being driven by a specific form of society, not humans in general, so the new epoch should be named after capitalism.

Most people who make that suggestion simply want to focus attention on capitalism's responsibility for the crisis in the Earth System. Although I don't think insisting on a name change is appropriate, I fully sympathize with the motivation: I think this book makes that very clear.

But a few academics go overboard, proposing that we accept *capitalism* and *capitalocene* as different names for the same thing: a new social/economic/environmental epoch that emerged in the 1500s.

Philosophers might call this a category mistake—capitalism is a 600-year-old social and economic system, while the Anthropocene is a 60-year-old Earth System epoch. Any serious engagement with social and natural science will conclude that capitalism existed for hundreds of years before the new geological epoch began, and that the new epoch will continue long after capitalism is a distant memory. Treating them as identical can only weaken efforts to get rid of capitalism and mitigate the harm it has caused to the Earth System, so that human society can survive—and hopefully prosper—in the Anthropocene.

(In passing: If our current epoch is the *Capitalocene*, then surely the previous epoch should be renamed *Feudalocene*, preceded by the *Slaveryocene*, preceded by . . . what? The *Hunter-Gatherer-ocene*? The fact that no one suggests such absurdities is instructive.)

The root word *anthropos* also appears in another common Earth Science term, *anthropogenic*. The expression "anthropogenic climate change" does not mean that all humans cause global warming; rather, it distinguishes changes that are caused by human action from those that would have occurred whether or not humans were involved. Similarly, Anthropocene does not refer to all humans, but to an epoch of global change that would not have occurred in the absence of human activity.

So take a deep breath, folks. The *fact* of the Anthropocene raises important political issues, but there is no hidden political agenda in the *word*. Anthropocene does not imply a judgment about all humans or human nature.

The name is not perfect. As the often overheated discussions show, it is open to misinterpretation. Maybe if ecosocialists had been present when Paul Crutzen invented the word in 2000 a different name would have been adopted, but now Anthropocene is widely used by scientists and non-scientists alike. Insisting on a different word (for left-wing use only?) can only cause confusion, and direct attention away from far more important issues.

Let's focus on the wheel, and not get hung up on what color it ought to be.

16. Townsend, "Change the System—Not the Climate!" Edited and updated with the author's permission.
17. This refers to the mass protests that challenged the World Trade Organization meeting in Seattle in 1999.
18. For an account of Soviet ecological science after the 1950s, see Foster, "Late Soviet Ecology and the Planetary Crisis."
19. Martinez, "We Are Facing Something More than a Mere Financial Crisis."

13. The Movement We Need

1. Klein, *This Changes Everything*, 450.
2. Lebowitz, *The Socialist Alternative*, 127.
3. Steffen et al., "The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?," 614.
4. Commoner, *The Closing Circle*, 295.
5. Marx, "Inaugural Address of the International Working Men's Association," *MECW*, vol. 20, 11.
6. Lenin, "What Is to Be Done," *Collected Works*, vol. 20, 423.
7. Luxemburg, "The Mass Strike, the Political Party, and the Trade Unions," *Rosa Luxemburg Reader*, 182.
8. Harnecker, *Rebuilding the Left*, 4.
9. Marx, "Provisional Rules of the Association," *MECW*, vol. 20, 14.
10. Foster, *Vulnerable Planet*, 114.
11. Marx: "The sect seeks its *raison d'etre* and its *point d'honneur*, not in what it has in common with the class movement, but in the *particular shibboleth distinguishing* it from that movement." *MECW*, vol. 43, 133.
12. Harnecker, *Rebuilding the Left*, 78.
13. Chakrabarty, "The Climate of History: Four Theses," 24.
14. Thompson, "Notes on Exterminism," 31.
15. Marx and Engels, "Manifesto of the Communist Party," *MECW*, vol. 6, 82.
16. *L'Ordine Nuovo*, May 15, 1919. Quoted in Williams, *Proletarian Order*, 11.

Appendix: Confusions and Misconceptions

1. Bookchin, "Social Ecology versus Deep Ecology."
2. Quoted in Magdoff et al., *What Every Environmentalist Needs to Know*, 32.
3. Suckling, "Against the Anthropocene."
4. Moore, *Capitalism in the Web of Life*, 169–73.
5. Baskin, "The Ideology of the Anthropocene."
6. See http://petitions.moveon.org/sign/against-the-official-2.
7. Crist, "On the Poverty of Our Nomenclature," 129, 130, 133, 140, 141.
8. Purdy, "Anthropocene Fever."
9. Crutzen, "The Geology of Mankind," 23.
10. Steffen et al., *Global Change and the Earth System*, 89–90.
11. Ibid., 96.
12. Ibid., 102.
13. Ibid., 140.

14. Ibid., 305.
15. Steffen et al., "The Anthropocene: From Global Change to Planetary Stewardship," 746.
16. Steffen et al., "Planetary Boundaries: Guiding Human Development," 9.
17. Steffen et al., "Trajectory of the Anthropocene," 91.