

Uneven Earth

Where the ecological meets the political

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The Anthropocene debate

Why is such a useful concept starting to fall apart?

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Source: [NASA](#)

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The Dutch version of this article can be found [here](#).

The term ‘Anthropocene’ has entered the climate change debate, and the question is whether it should stay there. It neatly encapsulates the idea that the Holocene—a scientific term referring to the present era—is no longer an adequate description. We now exist in an era when humans (*anthropos*) have fundamentally changed the geology of the earth and are present in almost all ecosystems.

We have raised the planet’s temperature, caused sea levels to rise, mined massive amounts of the earth’s crust, eroded the ozone layer, and are starting to acidify the oceans—all of these will be visible in fossil records millions of years from now.

While the word ‘Anthropocene’ has only recently entered the mainstream lexicon, it has become a rallying cry, to many signifying the urgency of action on climate change. While the term had been suggested previously in different

variations, Paul Crutzen, a Nobel prize-winning chemist, popularized it in 2002 in a 600-word article, “The geology of mankind”, in *Nature* magazine. He argues that the reality of “mankind’s growing influence on the planet” means that scientists and engineers face a “daunting task” of “guiding society”—through massive geoengineering projects, if necessary. To him, the Anthropocene is a key concept to explain the gravity of our current situation. As a result, for many, the term came almost as a revelation, further hammering home the fact that we have undeniably intervened in the earth’s systems, destabilizing it, and that we have to act now, and fast.

But even though the term has been championed by a wide diversity of people, it is also seeing some backlash, and not from the types you’d imagine: many climate scientists are reticent to use it, and it has faced critique from environmental and social historians. Why all the fuss about a word, and what does it matter?

As any activist will be happy to explain, it matters what words we use. They don’t just describe our problems; they also frame the solutions. And in the case of climate change, there’s a big need for good solutions, which means they need to be framed well. If we want to address climate change, we need to consider carefully whether we’re using the right words to describe the problems we face.

The following is a review of the Anthropocene debate, asking whether we should stick to using the word to describe our current problems, or drop it. As you’ll see, I definitely lean one way—I don’t think the term is as useful as its champions claim—but I’ll lay out the evidence as best as I can so you can make up your own mind.

The Anthropocene is often used to justify massive geo-engineering schemes, leading to an attitude that Richard Heinberg calls “we’re-in-charge-and-loving-it.”

From early adoption to widespread use

The term Anthropocene was popularised by hard-core climate scientists who want to illustrate what our world looks like and how it is so vastly different from the world we inherited. From this perspective, the concept might lead to an ‘aha!’ moment for the uninitiated: humans have already fundamentally altered the earth. For this reason, early adopters often used the word to convey the urgency of the present moment to the public.

The public happily took it up with headlines in major news outlets like the BBC, The New York Times, and Newsweek. It became regularly employed by climate activists such as Bill McKibben and environmental groups like Friends of the Earth, who use it in their reports and campaigns. Artists are taking up the term, and academics organize endless conferences with ‘Anthropocene’ as their guiding theme.

The types of opinions that cluster around the term vary. In the book *The God Species*, prominent environmental writer Mark Lynas argues that, since we are entering into a new, never-seen-before era of human control of the environment, we have the responsibility, duty, and possibility to control it further. Distancing himself from traditional environmental causes like anti-nuclear and GMOs, he argues that precisely *because* we are seeing unforeseen problems at a greater scale than anything we’ve ever seen, we will need to use all tools at our disposal. That includes nuclear power and genetic engineering.



“Over a decade after its injection into modern culture, the concept has taken on new forms beyond its original geological intent, becoming a meme capable of propping up a huge variety of arguments.”

Recently, Mark Lynas joined a cohort of other pro-tech scientists, writers, and environmentalists, and helped pen an “eco-modernist manifesto.” The authors claim that “modern technologies, by using natural ecosystem flows and services more efficiently, offer a real chance of reducing the totality of human impacts on the biosphere. To embrace these technologies is to find paths to a good Anthropocene.”

The problem? That the Anthropocene reveals that humanity is facing a never-seen-before predicament. The solution? Crank it up. Use more, and better,

technologies, in order to better control nature.

Richard Heinberg at the Post-Carbon Institute calls this the “we’re-in-charge-and-loving-it” attitude. To him, this “techno-Anthropocene” argument signifies a brand of scientist who embraces the Anthropocene simply because it gives humans full license to keep terraforming the planet. As Heinberg demonstrates, cranking it up inevitably relies on save-the-day technologies. As the eco-modernist manifesto claims, “Urbanization, agricultural intensification, nuclear power, aquaculture, and desalination are all processes with a demonstrated potential to reduce human demands on the environment, allowing more room for non-human species.” In contrast, Heinberg argues that these technologies aren’t as up to snuff as is often claimed. All of the above either rely on the use of cheap fossil fuels at a far greater rate than what they replace, or are scientifically (and morally) unsound.

One geo-engineering proposal would see expensive mirrors launched into space to reflect sunlight. Source: SCMP

Heinberg proposes his own version: the “lean-green Anthropocene”. According to him, since any feasible techno-solution will be powered by fossil fuels, a more desirable future would involve low-tech, high-labour, local food chains, and responsible water use (e.g. not dependent on energy-intensive desalination plants). But to him, it also requires an acknowledgement that humans aren’t the center of the universe: “Just as humans are now shaping the future of Earth, Earth will shape the future of humanity.”

Somewhat surprisingly, the term has also been eagerly adopted by critical theorists—perhaps too uncritically. For example, Bruno Latour uses the term—and the reality of human involvement in the climate—as a launching point to discuss the new politics that these crises require. Prominent political ecology scholars such as Laura Ogden, Paul Robbins, and Nik Heynen reference the term to support their own arguments that grassroots organizations are the key to resilience and political resistance in this new era. Slavoj Žižek suggests that the Anthropocene, and the scientists that propose it, makes us ask new questions about humans’ relationship to its environment, and our culture’s

obsession with the ever-present apocalypse. In another essay, Dipesh Chakrabarty, partly challenges the term from a postcolonial perspective, but ends up endorsing it, since it means that, in a way, everyone (the colonizers and the colonized, the rich and the poor) will be affected by the coming disasters.

I say surprisingly since these same theorists would hesitate to use the words democracy, development, or progress without “scare-quotes”—they specialize in questioning everything under the sun (and rightly so). For them to endorse this new word without a backward, questioning glance, is perhaps the best indication of its widespread appeal.

Anyway, you get the idea: the Anthropocene concept is supported by people of very different ideological persuasions. One advocates for business-as-usual driven by technological breakthroughs, another calls for a total transformation of humanity’s relationship with nature, yet another suggests that it signifies that we need to put our differences aside, and face this challenge together, as one.

Over a decade after its injection into modern culture, the concept has taken on new forms beyond its original geological intent, becoming a meme capable of propping up a huge variety of arguments.

Enter the problematization phase

Yet, in the past year—especially the past months—a flurry of critiques of the Anthropocene concept have appeared.

The first key issue is scientific. This has two facets. First, even though the concept is now well established in our vocabulary (“Welcome to the Anthropocene”, announced *The Economist* in 2011), there is still a whole lot of dispute on its exact meaning, and even its scientific validity. Second, the science is becoming more and more politicized.

Paul Crutzen's neologism enters into the realm of stratigraphy—a specific subfield that decides when each geological epoch starts and ends. And Crutzen is an atmospheric chemist, not a stratigrapher. If he was, he might've been able to anticipate the kind of bitter fights and tensions his proposal would cause.

Crutzen originally proposed that the Anthropocene started with the industrial revolution, specifically, the design of the steam engine. Since then, he's changed his mind, stating that it actually started with the testing of atomic bombs. But these kinds of whims do not pass in the field that actually decides geological epochs—they notoriously took 60 years to decide on a definition of the Quaternary, an age that spans 2.6 million years. The scientists that make these decisions are rigorous at best, meticulous at worst.

So they decided to form an international working group, to decide once and for all if the term could really stand the test of time. This was quite difficult. For one, there isn't even a formal definition of what "Anthropocene" really means. What constitutes a significant enough change in the earth's geological system, that allows us to draw the line? And *where* should we draw the line?

To this end, many proposals have been put forward. It started with agriculture 5,000 years ago, or mining 3,000 years ago. No: it starts with the genocide of 50 million indigenous people in the Americas. Or: it began with the 'Great Acceleration': the time period in the past fifty years when plastics, chemical fertilizers, concrete, aluminum, and petrol flooded the market, and the environment. Or: we have no way to tell yet, we might need to wait a couple more million years.

In short, the vagueness of the term led to the inability to pin down what it would actually look like, and how it could be measured. The result has been conflicts within the field of stratigraphy, where some are lamenting the fact that a highly politicized issue is skewing what is ideally a slow, careful, and delicate process: deciding when a geological era starts and ends. Leading scientists have posed the question whether the anthropocene is really just a 'pop culture' phenomenon, or a serious issue of concern for stratigraphers.

Consequentially, these scientific conversations *are* political in themselves. For many scientists involved, there is a feeling that those advancing the concept are interested more in highlighting the destructive qualities of humans to encourage action on climate change than to define a new scientific term. As Richard Monastersky notes in a *Nature* article tracing the politics of the attempt to define the term, “The debate has shone a spotlight on the typically unnoticed process by which geologists carve up Earth’s 4.5 billion years of history.” The effort to define the Anthropocene and place it on the map of geological timescales has become a minefield of politics, vested interests, and ideologies. As such, the Anthropocene once again reveals that science—often claimed to be objective—is driven by, and subject to, personal and political agendas.

Blaming humans, erasing history

But it’s not just because the Anthropocene is politically charged and difficult to pin down that we should think again about using it. There are more troubling issues with the concept that we should be aware of.

First is the concern that the Anthropocene concept ‘naturalizes’ human’s impact on the earth. What does this mean? Essentially, that by saying that this is the ‘epoch of humans’, we are suggesting that *all* humans are the cause. In other words, that there is something *intrinsically* bad about humans, where we will *always* and *inevitably* leave an imprint on our environment.

At play here is the (very Western) idea that humans are separate from nature, and that either we get back to it or we rise above it. Hence the call of the eco-modernists to ‘decouple’ from the natural world through technology. Hence, also, the call of the deep ecologists to appreciate nature “in itself”, without projecting our human needs and desires onto it. And hence the idea that all humans *caused* our current pickle.

The alternative, as environmental theorist Jim Proctor suggests, is appreciating

that the Anthropocene is not ‘because’ humans. It requires acknowledging that these processes and events are many and intertwined—there is no clear separation between nature and culture, human desires and natural forces.

But what forces should we blame? In all of the climate change research, we are told that it is definitely ‘man-made’. Arguing against this could bring us dangerously close to the denialist road.

It is at this point that we might want to select option (C): ask a historian. James W. Moore, a professor in environmental history, has asked whether we really ought to point the finger at steam engines, atomic bombs, or humanity as a whole. Instead, he argues for a different term altogether: the ‘Capitalocene’: the geological era of capitalism. In short, it is not because of the steam engine that we saw unprecedented use of fossil fuels—it is rather a system of governance and social organization that led to the global alterations we are seeing today. This required the establishment of innovative property laws backed up by military and police forces, as well as uneven power relations between a small class of capitalists and the working poor, women, indigenous cultures, and other civilizations. It was these institutions, developed and perfected over several hundred years, that allowed for the destruction of cultures and the over-exploitation of earth’s natural resources, culminating in our current crisis.



“We should question this idea that the Anthropocene is ‘the new reality’ affecting everyone. Actually, because of existing power relationships, the ‘new reality’ will be more ‘real’ for some than for others.”

It is strange to see the extent to which these kinds of wider social dynamics are totally obscured in the Anthropocene debate. For example, many have argued that the invention of fire was the first spark that would inevitably lead to the immense footprint that humans place on the earth.

This is not just a fringe position. Andreas Malm, in an article in *Jacobin Magazine*, notes that this idea is endorsed by Paul Crutzen, Mark Lynas, and other noteworthy scientists such as John R. McNeill. To these scientists, we can trace the terrifying impacts of climate change to the moment when a group of

hominids learned how to spark a flame.

But to say that the control of fire was a necessary condition for humanity's ability to burn coal is one thing, to argue that it is *the* reason why we are currently facing a climate crisis is another.

In a snappy journal article published in *The Anthropocene Review*, Malm and prominent environmental historian Alf Hornborg suggest that this neglect is due to the fact that scientists ringing the alarm bells of climate change are trained in studying the natural world, not people. To really identify the causes of anthropogenic climate change requires not just studying the winds, seas, rocks, and population growth, but also society and history. In particular, echoing Moore, it requires understanding the way by which technological progress has historically been driven by unequal power relations between an elite minority and a subjugated majority. Quoting Malm and Hornborg, “Geologists, meteorologists and their colleagues are not necessarily well-equipped to study the sort of things that take place between humans (and perforce between them and the rest of nature), the composition of a rock or the pattern of a jet stream being rather different from such phenomena as world-views, property and power.”

It follows that we should question this idea that the Anthropocene is ‘the new reality’ affecting everyone. Actually, because of existing power relationships, the ‘new reality’ will be more ‘real’ for some than for others. For most people, it will mean increased hardship and a fight for survival, while for some there will be easy lifeboats. In this way, Malm and Hornborg suggest that Dipesh Chakrabarty, the scholar embracing the concept from a postcolonial perspective, should rethink his position: climate change is not, in itself, a universal leveling force, but may instead further exacerbate inequalities between the rich and the poor.

Climate change won't affect everyone equally. More likely, it will mean that some get lifeboats and others do not. Source: ABC

This leads to a final issue: the problem of politics. If, as many Anthropocene

enthusiasts argue, the concept helps people understand the extent of human involvement in the earth's systems, it also could lead to a promising political conversation, finally alerting those in power that something needs to be done.

Yet as Jedediah Purdy, a professor at Duke University, notes in the magazine *Aeon*, "Saying that we live in the Anthropocene is a way of saying that we cannot avoid responsibility for the world we are making. So far so good. The trouble starts when this charismatic, all-encompassing idea of the Anthropocene becomes an all-purpose projection screen and amplifier for one's preferred version of 'taking responsibility for the planet'."

For many people, the Anthropocene means that 'there is no alternative'. Depending on your personal beliefs, the Anthropocene concept will lead you to different conclusions and calls to action. As Purdy says, "The Anthropocene does not seem to change many minds.... But it does turn them up to 11."

But is this a problem with any new concept or is it inherent to the Anthropocene? For Purdy, because the concept is so vague, it becomes "a Rorschach blot for discerning what commentators think is the epochal change in the human/nature relationship." With the diversity of opinions available, those with more political and ideological clout inevitably end up dominating the conversation.

Take for example Peter Kareiva, chief scientist at the Nature Conservancy, who argues that the Anthropocene signifies that now, more than ever, we need to abandon trying to protect wilderness and stop blaming capitalism, and that instead we need to encourage corporations to start taking responsibility for, and control of, earth's environmental services.

Kareiva's opinions have become wildly popular in mainstream discourse, but they also imply that rather than reassessing the current economic and political system, we need to go full speed ahead with the commodification of everything. The more vague a concept, the more susceptible it can be to co-optation. The vagueness of the term has, in part, led to its chameleon-like ability to fit anyone's agenda.

What's more, because the Anthropocene concept implies that humans as a whole are primarily responsible—and not relationships between humans—it actually stymies fruitful conversation, rather than encourage it. As Malm and Hornborg note, “The effect is to block off any prospect for change.”

Is the term still useful?

If these critiques are valid, why do climate scientists and activists still think the Anthropocene concept is so useful? Does it really convince those that need convincing, or does it just obscure important discussions that we need to be having?

In discussions and conversations with friends and peers, people have pointed out several times that Malm's and Hornborg's critiques fail to highlight the concept's original usefulness. As one geography professor said in an email exchange, “To me, the Anthropocene opens up the kind of inquiry these authors seem to invite, rather than shutting it down.” A friend, Aaron McConomy, noted the following on Facebook,

“I feel like all of these conversations are punditry around what's going on in the field that don't really represent anything that I'm hearing as someone actively reading and researching... It's like a meme of memes reacting to memes in which no one seems to even understand what exactly they're reacting to.

For me the bigger question is how to have ‘third way’ discussions. What the reality of the Anthropocene calls for is a profound reworking of social ecological systems. Very few of the examples that get trotted out are up to the task.”

Point taken. Instead of quibbling about the meaning of the Anthropocene, we need to be finding alternatives to the problems we face. And while the term has real use for geologists, it can incentivize necessary conversations about political alternatives. This is a valid response to the problematization the term has

received: all else considered, the term has been useful in lighting the fuse of an important debate.

But what kind of debate? Because the Anthropocene points to humans as the primary culprit of the earth's current situation, it doesn't really point to the fact that a minority of the earth's population has inflicted most of the damage, nor does it broaden the discussion to include those who may be most affected by climate change but whose role in causing it is, effectively, zero.

By resorting to a catch-all geological (and biological) term to describe the situation we're in, there's a risk that it helps shut down alternative viewpoints, alternative narratives, and alternative politics. As Malm and Hornborg emphasize,

“It's hard to say if the term is, on average, inimical to good debate or if it encourages it. But after considering the twists and turns the concept has taken since its inception until its current use, it's worth taking the critics seriously.”

“If global warming is the outcome of the knowledge of how to light a fire, or some other property of the human species acquired in some distant stage of its evolution, how can we even imagine a dismantling of the fossil economy? [Arguing that climate change is caused by one species] is conducive to mystification and political paralysis.”

It's hard to say if the term is, on average, inimical to good debate or if it encourages it. But after considering the twists and turns the concept has taken since its inception until its current use, it's worth taking the critics seriously. Care has to be taken around such loaded words, and we have to take a step back and ask when, and why, we use them.

Yes, 'Anthropocene' can be useful to tell the history of life on earth. It can also illustrate the extent to which humans have modified the earth's systems. It also suggests that we can no longer go back to a 'pristine' nature that existed before humans, as cultural critics have long suggested. The term is incredibly appealing from a geological perspective, highlighting the fact that humans have made so deep an impact on the earth's crust that future inhabitants of the

earth, when digging, will come across a layer of soil that has ‘human’ written all over it. This geological fact is a useful tidbit to highlight all of the above.

But it doesn’t necessarily, as many have argued, help challenge the systems that perpetuate climate change. Because it applies to humans as a whole, it does not indicate that our problem is political, resting on the uneven distribution of power. In leaving the starting date of the Anthropocene undefined (some say 50 years ago, others say 400 years ago, yet others say 10,000, still others say 50,000), the word fails to highlight the primary actors of today’s ecological crisis.

Like ‘sustainability’, ‘development’, ‘natural’, or ‘green’, the term is so vague that it can be used by anyone, whether they want to challenge the powers that be, just want to make a quick buck, or score a research grant. While the term can be used to support arguments for action on climate change, it can just as well be used to support digging more oil wells (“oh what the heck, we live in the age of human superiority anyway!”).

You might ask, isn’t this the case with all words? Not true. There are plenty of terms that the climate movement is using that are both powerful and are not so easy to appropriate: degrowth, climate justice, ecocide, ecological debt, and 350ppm are just few.

The point is not that Anthropocene should be abandoned—clearly it’s had its uses. But should it, like the above examples, be calls-to-action of climate researchers and activists alike? Should it be used as a conversation-starter, in the hope that it will convince those in power to change their tune? Should it be used uncritically as the main theme of countless academic conferences? Probably not.

Instead of hi-tech high-input solutions, we could address climate change by building up topsoil with low-tech agriculture. Source: Kwaad.net

Conclusion: where does the Anthropocene go from here?

Words are powerful.

As many climate activists know, climate change is a battlefield of words. ‘350.org’ is named after the 350 parts per million of carbon in the atmosphere that has been deemed acceptable by scientists. ‘Climate justice’ refers to the fact that climate change will affect different people unequally, and that the climate movement needs to align with people who are systematically oppressed in other ways. ‘Climate chaos’ was coined to dispel confusion, indicating that climate change will cause disruption in normal weather patterns rather than, as the term ‘global warming’ may lead one to think, causing a slow increase in temperature globally.

Each phrase has seen a cycle of early adopters, growing usefulness, paradigm shifts in the general discussion, and then often critique and slow abandonment.

Some concepts introduced by social movements of the past have stuck around: social justice, civil disobedience, human rights. These terms signify both the predicament and the strategy, remain political without being too scary, and are difficult to be appropriated by apolitical actors. For these reasons, they remain useful for social movements today. ‘Anthropocene’ is no such word: it is vague enough to be used by anyone, it is scary but doesn’t really suggest a way out. It has flair, it’s catchy, but lacks power.

Why does this matter? Words can make or break whole movements. If a movement rallies around a single term—say, civil rights—that changes the way the public, and therefore politicians, see the predicament at hand. The way a problem is defined, the slogans that movements use, are incredibly important in order to make necessary policy changes. Unfortunately, the term ‘Anthropocene’ fails to adequately frame the current situation, and in-so-doing allows anyone to co-opt it for their own solutions. While it has certainly got many people talking, it is neither political



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nor precise, and therefore may not lead to a very good, or challenging, conversation. And right now we need to have challenging conversations.

situation, and in-so-doing allows anyone to co-opt it for their own solutions.”

Yet, like it or not, ‘Anthropocene’ has already been let out of the box and changed the way we think and talk about the world. Scientists will keep citing it, social theorists will ponder it, artists will be inspired by it, and pundits will employ it to justify anything under the sun. It has become a “meme of memes reacting to memes.”

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