

The Case of the Missing Anthropocene

Many have heard about the Anthropocene. The name captures the concerted powers of human action, which through extraction and use of resources has risen as a force of nature. Human action moves more Earth materials than rivers, volcanoes, and tectonic movements do over the surface of the planet. Geologists have debated if this phenomenon should signal that we have left our old, much calmer Holocene epoch, and entered a new much more unruly epoch, the Anthropocene. While the environmental and societal problems of the Anthropocene are piling up, the geologist community has run into problems due to the rigidities and procedures of name-giving.

Seventy years ago, on March 1st 1954, the United States detonated a thermonuclear bomb at Bikini Atoll in the Marshall Islands. Codenamed the Castle Bravo test, the blast was equivalent to 15 million tons of TNT. This was a surprise to the bomb's designers; they had anticipated a 6-megaton blast. Oops.

Less of a surprise was the Cesium-137 that was produced as a result of the blast. This isotope (as well as other radioactive substances caused by the blast) resulted in a substantial harm to the inhabitants of Bikini and nearby islands, as well as unsuspecting fisherman who were in the vicinity of the explosion. The radioactive signal from the blast didn't remain local; gaseous and particulate fallout spread around the world.

One place it reached was a tranquil lake not far from Toronto, Canada. The fallout deposited on the ground and in the lake, and was eventually incorporated in a layer of sediment at the lake bottom. This layer provides one of a number of indelible signals of human impact that began after the end of the Second World War.

Scientist Will Steffen and colleagues have characterized the period around 1950 as "The Great Acceleration". They found that if you picked whatever happens to be your favorite quantity – methane emissions, fertilizer consumption, freshwater usage, international tourism, nitrogen in coastal zones, myriad other quantities – there was an acceleration in all of these quantities right around 1950. This inflection point marked a change in the relationship between humans and our planet.

Will Steffen was the Executive Director of the International Geosphere-Biosphere Programme (IGBP) from 1998 to 2004, during a period and at an organization that was pioneering the field of Earth System Science, and supporting interdisciplinary efforts to research this "Great Acceleration". Nobel Laureate Paul Crutzen was also a member of IGBP. During the annual meeting of the IGBP Scientific Committee in 2000, as the paleo-scientists in the organization were discussing happenings in what has been named the Holocene, Crutzen interrupted the presentation and declared that we are no longer in this epoch. He maintained that humans had become a major driving force in many of the fundamental cycles of the planet. He claimed that we were in a new epoch – the Anthropocene.

Since that famous meeting, the concept of the Anthropocene has become accepted and imbedded in a wide range of scientific disciplines. After more than a decade of work, a “Golden Spike” was identified to mark the beginning of this new epoch: Traces of different materials specifically associated with human activity (including the ^{137}Cs and plutonium from the Castle Bravo detonation) in a sediment core from Crawford Lake in eastern Canada.

Despite the broad acceptance in the scientific community at large, despite the clear recommendation from the interdisciplinary group tasked with assessing the evidence for declaring a new geological time period, and despite ample evidence establishing the “Great Acceleration” as a discernable global and effectively permanent change in the behavior of the Earth system, one group of geologists apparently does not recognize the reality of this new epoch.

Some weeks ago, a majority of the members of the Subcommittee on Quaternary Stratigraphy voted against the proposal to name a new Anthropocene epoch. While the vote is currently being contested due to “procedural irregularities”, it is a rather disappointing result. Science has not been well served.

First of all, it is important to note that this is a name-giving problem, that does not undermine all the scientific observations on environmental change and climate change that define the Anthropocene. Secondly, the lack of formal recognition of the new Anthropocene epoch by some members of the Subcommittee on Quaternary Stratigraphy will not stop the term from being used by the rest of the scientific community. The term has traction in the humanities and social sciences and has opened up discussions on how the current economic system has contributed to the acceleration and how it can change. Furthermore, research has started to query how the “average” human in the Anthropocene could be understood, where not every human contributes to the burden in similar ways, and where the justice question of who causes and who will be suffering most of the damage comes under consideration. Furthermore, it opens up questions of how one can discuss and handle questions of long-term cause and effect, as well as care between generations. The Anthropocene phenomena is not a concern for humans alone, it affects the lifeworld’s of several beings on this planet and challenges futures.

It is important to be observant in that the crack-up in the naming system will not slow down the research into the great acceleration, how this new epoch behaves and how it can best be handled. The scientific community at large will continue research into the Anthropocene as an ongoing and potentially existential phenomenon for society. The naming will not change the reality that we are in fact in a new planetary epoch, where the stability of the Holocene is left behind.

We need to avoid the fossilization of thought that the Subcommittee engages in when they are refusing to recognize our new planetary condition with a suitable name, while being fully aware of the devastating effects anthropogenic action has on the planet. Furthermore, research in the humanities, social and natural sciences continue to work with how to figure out how to deal with our new epoch in a just, empathic, flourishing and rational manner.

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15 March 2024