

Terminal Cenozoic Era or Anthropocene? Emerging Ecozoic Era or Sustainability?

By Herman Greene

Thomas Berry writes of the Great Work of transitioning from a terminal Cenozoic era to an emerging Ecozoic era. His interpretation that a geological era is ending, one that began 65,000,000 years ago following the death of the dinosaurs, is a bold one. If it is true, then, as Berry wrote, for the first time ever humans are going through a transition in geological eras.

What Berry calls the “terminal Cenozoic” is not a benign event. In 1988 he wrote, “The anthropogenic shock that is overwhelming the earth is of an order of magnitude beyond anything previously known in human historical or cultural development. . . . We are acting on a geological and biological order of magnitude. We are changing the chemistry of the planet. . . . We are upsetting the entire earth system.”¹ He referred to a mass extinction of life comparable to that which ended the Mesozoic era.² This would be the sixth mass extinction in Earth’s history. The five previous mass extinctions were the:

- **Ordovician-Silurian, 440 million years ago, 85% of sea life lost** Massive glaciations, precipitous drop in sea levels, toll on small marine organisms
- **Late Devonian, 365 million years ago, 75% of species lost**
Drawn out event, pulses of 100-300,000 years, toll on tropical marine species
- **Permian-Triassic, 250 million years ago, 95% of species lost**
Asteroid, volcanic eruptions, methane release, low oxygen levels, and/or sea level
- **Triassic-Jurassic, 210 million years ago, 50% of species lost**
Climate change, flood basalt eruptions and/or asteroid impact, plants not affected
- **Cretaceous-Tertiary, 65 million years ago, 50% of all species lost**
Asteroid impact Mexico, volcanic eruptions India. Dinosaurs and more became extinct

A mass extinction and a change in geological era is a BIG Deal. It is the biggest deal that has ever occurred in human history. It requires, as Berry wrote, the “reinvention of the human,” which I take to mean that we have to have a re-start on human civilization . . . easier to say than to do or even to know what to do.

There is science that supports Berry’s view of a transition in geological periods in Earth history, but with a narrower claim. The scientific term that has emerged to describe what Berry calls the terminal Cenozoic era is the “Anthropocene epoch,” a successor to the Holocene epoch. In geological time scales, an “era” is a period of dozens of millions of years and an “epoch” is a period many thousands of years.

¹ Thomas Berry, *The Dream of the Earth* (San Francisco: Sierra Club Books. 1988), 211, 206.

² Ibid., 90.

The term “Anthropocene” is the name given by Paul Crutzen and Eugene Stoermer³ for the period during which human activity has been the dominant influence on climate and the environment. The now generally accepted date for the beginning of the Anthropocene is the mid-20th century, the start of the “[Great Acceleration](#)” in human activity. It has been argued that Berry can be credited with having developed the concept of the Anthropocene *avant la lettre* (before the term was coined). This raises the question, however, whether Berry’s terminology and the emerging terminology around the Anthropocene are the same.

Both sets of terminology share the characteristic of having both a scientific and a humanistic aspect. This causes a problem for proponents of the Anthropocene as they seek to have it recognized as the current geological epoch by the International Commission on Stratigraphy or the International Union of Geological Sciences.⁴ The mix of science and humanities is, however, unavoidable in naming an epoch in which human culture is a determinant of the era or epoch being named.

Berry writes of the terminal Cenozoic era and the emerging Ecozoic era. The Ecozoic era is the time of human dominance, as is the case of the Anthropocene, but it is also a time of mutually enhancing relations between humans and nature. Thus for Berry, the Ecozoic era is normative and not something that necessarily will occur. It can only be accomplished by the Great Work, and the contours of the Ecozoic era are of an other-than-industrial civilization.⁵

The Anthropocene encompasses all phases of the period of human dominance of climate and environment whether ill (as in Berry’s terminal Cenozoic era) or good (as in Berry’s emerging Ecozoic era). Yet scientists who are proponents of the Anthropocene as a new epoch share with Berry that the conditions of life at the onset are ominous and unsustainable. Regarding the potential good side of the Anthropocene, the rough equivalent in the terminology of the Anthropocene to Berry’s Ecozoic era is “sustainability” or “sustainable development,” language which does not carry an implication of a transition from modernity or industrial civilization. For example, Crutzen and Stoermer conclude their sentinel article as follows:

Mankind will remain a major geological force for many millennia, maybe millions of years, to come. To develop a world-wide accepted strategy leading to sustainability of ecosystems against human induced stresses will be one of the great future tasks of mankind, requiring intensive research efforts and wise application of the knowledge thus acquired in the noösphere, better known as knowledge or information society. An exciting, but also difficult and daunting task lies ahead of the global research and

³ See Paul Crutzen and Eugene Stoermer, “The Anthropocene,” *IGBP Newsletter* 41 (May 2000): 17-18.

⁴ See, e.g., Whiney Autin, “Is the Anthropocene and Issue of Stratigraphy or Pop Culture?”, *GSA Today* 22, No.7 (July 2012): 61-62.

⁵ An “other-than-industrial civilization,” not a “post-industrial civilization,” the latter a term that is used to talk about a transition in economies like that of the United States from manufacturing to information technologies and services.

engineering community to guide mankind towards global, sustainable, environmental management.

Berry's terminology and the terminology of the Anthropocene are not equivalent, but they are closely related. Significantly, they are not contradictory though some who emphasize the importance of moving from anthropocentrism to biocentrism or geocentrism will be troubled by the emphasis on the "anthro," i.e. human, in the Anthropocene. They will see the Anthropocene as something to move from (rather than remain in) to an ecozoic/biocentric/geocentric epoch. To an extent though this is to miss the point that the Anthropocene epoch is primarily a scientific term that is merely descriptive of this period of human dominance. It is not normative, though granted it may carry a connotation of the primacy of humans and hence of anthropocentrism.

Yet Berry also emphasized this in describing the ecozoic. In his paper on "The Determining Features of the Ecozoic Era" he wrote: "In the Ecozoic, the human will have a comprehensive influence on almost everything that happens. While the human cannot make a blade of grass, there is liable not to be a blade of grass unless it is accepted, protected and fostered by the human."

While not promoting the same values as Thomas Berry, both scientists and humanists interpreting the Anthropocene share Berry's anxiety about the grave disturbance in the Earth's functioning incident to the Anthropocene. Clive Hamilton writes, "The idea of the Anthropocene was conceived by Earth System scientists to capture the very recent rupture in Earth history arising from the impact of human activity on the Earth System as a whole."⁶ He and others recognize that the rupture caused by the Anthropocene is so severe and will be so long lasting that rather than speaking of a new geological epoch what may be occurring is a new geological era. This era is not necessarily one of mutually enhancing relations as is the case in Berry's promise of an Ecozoic era. Yet those who interpret the Anthropocene are not indifferent to the human prospect or to other species and life systems. They write, like Berry, to provide guidance to humans.

Another difference between Berry's treatment of the present transition and that given by those who write on the Anthropocene concerns the nature of Earth as subject. Berry like many other environmentalists tends to see Earth as a victim, even a somewhat impotent or passive victim languishing under humanity's assault. Those who write of the Anthropocene emphasize the reactive power and freedom of Earth in responding to this assault. Earth is more than a long-suffering, nurturing mother; it has the power to destroy and fashion reality beyond human control even in this period of supposed human dominance.

Berry's work and terminology is that of a humanist in dialogue with science. For all of his talk of biocentrism, he values the human and seeks to articulate a path forward for humans in a new

⁶ Clive Hamilton, *Defiant Earth: The Fate of Humans in the Anthropocene* (Cambridge, UK: Polity Press, 2017), 9.

era of mutually enhancing relations with the natural world and among humans as well. Those who write about the Anthropocene are scientists in dialogue with the humanities. They want to warn humans of the implications of the Anthropocene for the human future. Those humanists who have absorbed this warning then write about what it means for humans to live in the Anthropocene. Their writing tends to be sobering, not comforting and certainly not utopian. They offer a literature that was not available to Berry and now Berry must be understood and interpreted taking into account the literature of the Anthropocene.

Berry's guidance will benefit from this literature. The literature of the Anthropocene can be informed by Berry.