

THE INEVITABLE ADJUSTMENT TO THE ANTHROPOCENE

The Great Acceleration: An Environmental History of the Anthropocene since 1945,
J. R. McNeil and Peter Engelke (Belknap Press of Harvard University Press, 2014)

Reviewed by Herman Greene

Civilization began with the rise of Neolithic farming villages around 10,000 BCE. All of human development until very recently occurred during the geologic epoch known as the Holocene. In the history of Earth, the Holocene has had unusually stable climate and for most of this epoch Earth's life systems functioned as they did prior to large scale human intervention. Sometime following the industrial revolution and the beginning of the fossil fuel regime in the second half of the 18th century, human intervention greatly increased and gave birth to the Anthropocene epoch. Paul Crutzen and Eugene Stoermer, who coined the term in a 1999 article, dated the beginning of the Anthropocene as the late 18th century when the industrial revolution began.¹ J.R. McNeil and Peter Engelke in their important book, *The Great Acceleration: An Environmental History of the Anthropocene since 1945*, argue for the mid-20th century. They give these reasons:

First that since the beginning of the mid-twentieth century human action (unintentionally) has become the most important factor governing crucial biogeochemical cycles, to wit, the carbon cycle, the sulfur cycle and the nitrogen cycle. These cycles form a large part of what is now called the "Earth system," a set of interlocking global-scale processes. The second reason is that since the mid twentieth century human impact on the Earth and the biosphere measured and judged in several different ways . . . has escalated.

The escalation since 1945 has been so fast that it sometimes goes by the name the Great Acceleration. (P. 4, footnote omitted)

In this book McNeil & Engelke, given an environmental history from 1946-2014. Fifty-five years of this history overlaps the period, 1901-2000, that McNeil covered in *Something New under the Sun: An Environmental History of the Twentieth-Century World* (published in 2000, see review in this issue). Only fourteen years separate the publication date of the earlier book from the later book, but the perspective in the later book was quite different from the earlier one, even regarding the fifty-five years of overlapping history. For example, in *Something New under the Sun*, McNeil devoted two-and-a-half pages to global warming, in *The Great Acceleration*, eighteen pages are devoted to it. The same ration applies to biodiversity: two-and-a-half pages in the earlier book and eighteen in the later one.

The strength of *Something New under the Sun* was its focus on the mechanisms of change, such as the building of dams and diversions of water for irrigation, hydroelectric power, flood control, water course stabilization for human settlements, barge traffic, and shipping; and the

¹ Paul J. Crutzen and Eugene F. Stoermer, "The Anthropocene," *IGBP Newsletter* 41 (May 2000): 17-18.

pumping of underground aquifers. McNeil wrote about the effects of these and many other mechanisms on, as applicable, the lithosphere and pedosphere, the atmosphere, the hydrosphere, and the biosphere. He devoted the last 80 pages leading up to the epilogue to the overall drivers of change.

With the hindsight of only an additional fourteen years, McNeil and Engelke begin *The Great Acceleration* with greater awareness of the scale of changes that are taking place, the rapid acceleration of those changes since 1945, and the lasting cumulative impact and irreversibility of the changes. They state at the outset that the Holocene epoch is over and we have entered the Anthropocene.

The strength of this book is that it develops eight narratives to explain the history of the Great Acceleration. These are

- Energy (cheap energy through fossil fuels),
- Climate (global warming)
- Biodiversity (loss of wild species, growth in domesticated animals and animals that adapt well to human settlements, agricultural monocultures)
- Population growth,
- Economic growth (including impact of technology),
- Urbanization,
- Cold and hot wars (the warfare footing that has persisted since 1945, effects of nuclear testing and power, hot wars since 1945), and
- Environmentalism (a counter movement and its unrealized objectives).

The Great Acceleration continues, and these eight factors remain the drivers of change.

Statistics relating to the Great Acceleration have often been given, but they never fail to impress—they mark progress in human achievement and at the same time portend peril. Since 1945

- 75% of human loading of the atmosphere occurred,
- The number of motor vehicles increased from 40 million to 850 million,
- Human population nearly tripled and the number of people living in cities increased from 700 million to 3.7 billion,
- In 1950 there were 1 million tons of plastic produced and that rose to 300 million tons, and
- Nitrogen synthesized (mostly for fertilizer) rose from 4 million tons to 85 million tons. (P. 4)

All this in the lifespan of a single person.

In their conclusion the authors decline to predict catastrophe. They anticipate that the Anthropocene will continue long into the future—humans will be a dominant influence on global ecology—but the Great Acceleration cannot continue. Eventually reliance on fossil fuels will end, population growth will slow down, and whether by design or accident human impact on Earth will lessen. This will not end the Anthropocene, but will bring it to a new stage, one “perhaps less worrisome. [For future generations, the history of the 21st century will] give them “a fair idea of what to expect” (p. 209).

One wonders if the authors have understated the risks and consequences of the Anthropocene. Maybe they did, but there is something salutary in the reminder that humans will, barring a catastrophe even greater than global warming in excess of 2.0oC, live on after the 21st century and will remain dominant in the environment and climate. This view is no different than that of Thomas Berry who projects that in the Ecozoic era humans will be involved in all aspects of nature.

The author’s did not, however, end there. They chided historians, social scientists, and scholars of the humanities to pay attention to the Anthropocene. Economists, they note, are almost oblivious to it: In the period of the Great Acceleration, they have

jilted reality in favor of a . . . fantasy, one of ever-more-abstract modeling based on universalizing assumptions of individual behavior and state conduct, casually ripped from all historical and cultural, not to mention ecological, context. Social sciences and the humanities, especially in their most prestigious bastions, showed themselves scarcely more attuned to the advent of the Anthropocene than governments floundering with energy policy and climate politics. (P. 210)

On the whole at this juncture, systems of thought and ideologies, customs and habits, and institutions and policies “remain firmly anchored in the late Holocene” (p. 211). This should not be surprising as inertia is a powerful force. Modern thought and institutions were nurtured in the late Holocene in the time of cheap energy, stable climate, and rapid growth of technology, population, and the economy. Still this will not last. We will adjust to the Anthropocene one way or another. “Political, economic, and cultural institutions . . . must now evolve into forms more compatible with the Anthropocene—or give way to their successors” (p. 209).

We of the Center for Ecozoic studies believe the “ecozoic way” provides guidelines for political, economic, and cultural institutions to succeed the modern. We are left with these questions:

- How much unnecessary suffering will occur in this transition?
- How much lasting damage will occur to Earth’s species and life systems?
- What will be the cost of attempts to preserve the status quo and profit from it?
- What errant imaginations will lead societies and individuals on futile and destructive paths?

- How can we strengthen our own commitment to the Great Work, what sacrifices, inconveniences and hardships are we willing to suffer for it, and how can we be more effective in it?