

Barry Commoner and the Great Acceleration

by Ian Angus

In the past 15 years, scientists have re-examined their understanding of humanity's relationship with the rest of nature, and have drawn radical conclusions. It is now widely accepted that in the past 200 years human activity has pushed the Earth into an unprecedented and potentially dangerous state, and that almost all of the change occurred in the second half of the 20th century. Reflecting these conclusions, global scientific organizations are now considering proposals to identify the time since 1800 as a new geological epoch, the *Anthropocene*, and the years since World War II are being called the Great Acceleration.

Unmentioned in the many scientific papers and talks about these topics is the fact that their conclusions—particularly about the Great Acceleration—were anticipated nearly five decades ago by one of the founders of modern ecology. Barry Commoner wrote before many aspects of the Great Acceleration were visible, so his account was not as complete as those being published today—and yet his analysis of its social, economic and political causes is markedly superior. To fully understand today's global environmental crisis, it is essential to build both on contemporary scientists' description of the Great Acceleration and on Commoner's explanation of the changes in capitalism that caused it.

Just as Marx and Engels studied the scientific, technological and other discoveries of their time and used their new knowledge to extend, deepen or change their political conclusions, socialists today need to understand the Anthropocene and the Great Acceleration in order to develop a socialist response to the environmental crisis. Whether or not one accepts the label *ecosocialism* for that program and movement, there is no question that Commoner's work and the latest scientific studies show that environmental action must be at the top of the agenda for socialists in the 21st century.

Geologists and other scientists have long referred to the 12,000 years since glaciers last retreated from most of the earth as the *Holocene* (entirely new) epoch. All of humanity's history since we invented agriculture has taken place in this relatively warm and climatically stable period. During the Holocene human societies have frequently changed or damaged ecosystems, but our impact has been limited in space and time: we eventually moved on and the earth recovered. [1]

The international scientific organizations responsible for the Geological Time Scale are currently considering a proposal by Nobel Prize winning atmospheric chemist Paul Crutzen to formally define the time since about 1800 as a new geological epoch, the *Anthropocene*, meaning *new human* epoch. [2] Crutzen's argument is that since the beginning of the Industrial Revolution human beings have been making permanent changes that affect the entire world—most notably by increasing atmospheric concentrations of greenhouse gases and so changing the earth's climate.

Naming a new epoch might not seem radical, but it's a very big deal for geologists. Other recog-

nized epochs are separated by mass extinctions, asteroid strikes, retreating glaciers and similar phenomena. Declaring that a new epoch has begun and that it

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is defined by the activity of our species amounts to a declaration that human activity is comparable to such planet-shaping events.

Barry Commoner

The scientist who studied the postwar environmental crisis most closely and offered the most complete social and economic explanation was a socialist and ecologist who taught at Washington University in St. Louis, Missouri.

Barry Commoner rose to prominence in the 1950s as a leader of the campaign against nuclear bomb tests. His scientific research into the extent and impact of radioactive fallout—a deadly threat whose very existence the US military and government denied—made him very aware that humanity now had the ability to poison our world on a scale never before possible. In the 1960s, as founder of the Center for the Biology of Natural Systems, he brought that understanding to his study of other kinds of pollution.

In 1966, Commoner warned that humanity's relationship with what scientists now call the Earth System was in crisis.

As a biologist, I have reached this conclusion: we have come to a turning point in the human habitation of the earth. The environment is a complex, subtly balanced system, and it is this integrated whole which receives the impact of all the separate insults inflicted by pollutants. Never before in the history of this planet has its thin life-supporting surface been subjected to such diverse, novel, and potent agents. I believe that the cumulative effects of these pollutants, their interactions and amplification, can be fatal to the complex fabric of the biosphere. And, because man is, after all, a dependent part of this system, I believe that continued pollution of the earth, if unchecked, will eventually destroy the fitness of this planet as a place for human life. [3]

Commoner's 1971 book, *The Closing Circle: Nature, Man & Technology*, was his most ambitious account of the nature and causes of the environmental crisis. He identified the years following 1945 as a turning point: "We know that *something* went wrong in the country after World War II, for most of our serious pollution problems either began in the postwar years or have greatly worsened since then." [4]

Commoner compiled statistics showing dramatic increases in production after 1945. Unlike today's Great Acceleration writers, Commoner also compiled statistics on production that *declined* in the same period. By including both increases and decreases, Commoner was making an important point. If this were simply a *growth* issue (perhaps driven by population increase), then all products should have increased. In fact, production and pollution had not only increased much more rapidly than population since 1945, *their character had changed*.

While production for most basic needs—food, clothing, housing—has just about kept up with the 40 to 50 per cent or so increase in population (that is, production per capita has been essentially constant), the *kinds* of goods produced to meet these needs have changed drastically. New production technologies have displaced old ones. Soap powder has been displaced by synthetic detergents; natural fibers (cotton and wool) have been displaced by synthetic ones; steel and lumber have been displaced by aluminum, plastics, and concrete; railroad freight has been displaced by truck freight; returnable bottles have been displaced by nonreturnable ones. On the road, the low-powered automobile engines of the 1920's and 1930's have been displaced by high-powered ones. On the farm, while per capita production has remained about constant, the amount of harvested acreage has decreased; in effect, fertilizer has displaced land. Older methods of insect control have been displaced by synthetic insecticides, such as DDT, and for controlling weeds the cultivator has been displaced by the herbicide spray. Range-feeding of livestock has been displaced by feedlots. [5]

As a result, the environmental crisis wasn't just bigger than in the past; it was *qualitatively different and worse*.

The chief reason for the environmental crisis that has engulfed the United States in recent years is the sweeping transformation of productive technology since World War II... Productive technologies with intense impacts on the environment have displaced less destructive ones. The environmental crisis is the inevitable result of this counter-ecological pattern of growth. [6]

In particular, Commoner pointed at the spectacular expansion of the petroleum, petrochemical and related industries, which produced products and wastes that nature could not recycle, and which at the same time stimulated a huge expansion in the amount of energy used in production and transportation. Low-energy manufacturing gave way to high-energy processes, and natural products were replaced by

synthetic ones that required petroleum as raw material and for energy.

Once our attention focuses on changes in production technology, it's easy to see why the Great Acceleration began when it did. As Commoner pointed out, the decades before the war saw revolutionary advances in basic science, especially physics and chemistry. Much of the new science was adopted for military purposes during the war, and then rapidly moved into industrial and agricultural production after it. "The period of World War II is, therefore, a great divide between the scientific revolution that preceded it and the technological revolution that followed it." [7]

We can add that the massive destruction of productive capacity during the Great Depression and the War created opportunities after 1945 for war profiteers to invest their ill-gotten gains in rebuilding industry using new technology. The process was hastened by the flood of cheap oil from Saudi Arabia after 1948, which made switching from coal and natural materials to petroleum and synthetics particularly attractive to investors.

The root problem, Commoner argued, was an economic system that puts profit ahead of the health of people and planet. "Private business has chosen to invest its capital preferentially in a series of new productive enterprises that are closely related to the intensification of environmental pollution." Corporations do this not because they have a perverse affection for pollution, but because "production based on

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the new technology has been more profitable than production based on the old technology it has replaced." [8]

The crucial link between pollution and profits appears to be modern technology, which is both the main source of recent increases in productivity—and therefore of profits—and of recent assaults on the environment. Driven by an inherent tendency to maximize profits, modern private enterprise has seized upon those massive technological innovations that promise to gratify this need. [9]

He devoted a chapter of *The Closing Circle* to documenting connections between high rates of profit and practices that are particularly stressful towards the environment, concluding that "an economic system which is fundamentally based on private transactions rather than social ones is no longer appropriate and increasingly ineffective in managing this vital social good [the ecosphere]." [10]

Twenty years after *The Closing Circle*, Commoner wrote a sequel, *Making Peace with the Planet*, which brought his account of the "counter-ecological pattern of growth" up to date and examined why two decades of environmental action had failed. He remained optimistic but warned, "the ecosphere is under attack that is intolerable in its present impact and

likely to end in global catastrophe” if environmentalists continue “dealing only with symptoms and applying palliatives instead of attacking the problem at its root.” He also anticipated a key part of Crutzen’s Anthropocene argument:

We need to understand the interaction between our two worlds: the natural ecosphere, the thin global skin of air, water, and soil and the plants and animals that live in it, and the man-made technosphere ... The technosphere has become sufficiently large and intense to alter the natural processes that govern the ecosphere. [11]

I don’t want to suggest that Commoner’s account was above criticism or complete. For example, he had little to say about the trends in global capitalism that enabled the long economic boom from 1945

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to 1973, which was both a product and a cause of the technological revolution he describes. We still lack a full historical, economic and ecological account of the Great Acceleration.

But when such an account is written, it will necessarily begin from Commoner’s three core arguments: that there was a qualitative change in the dominant productive technologies after World War II; that as a result pollution and environmental destruction not only increased but changed in character; and that the transformation occurred because using the new technologies increased corporate wealth and profits.

And if it is done well, the account will agree with the conclusion he stated in 1976: “There’s something wrong, and I think the answer is that we have to now begin to think about replacing the capitalist organization of the economic system by a system which is governed by human need, by social need, and of course, with a small s, that’s socialism.” [12]

Crutzen’s proposal to name the epoch after the *anthropos*—humans—can be interpreted to mean that the global environmental crisis is caused by all humans, rather than by the 1% of humans who actually make and enforce the decisions that are transforming the biosphere. That in turn can lead to neo-Malthusian conclusions—that the only way to protect nature is to reduce the number of people. Many scientists do in fact identify population growth as a principal driver of the Great Acceleration.

It’s important to remind them, as Swedish ecologists Andreas Malm and Alf Hornborg do, that “the fossil economy was not created nor is it upheld by humankind in general.”

The succession of energy technologies following steam—electricity, the internal combustion engine, the petroleum complex: cars, tankers, aviation—have all been introduced through investment decisions, sometimes with crucial input from certain

governments but rarely through democratic deliberation. The privilege of instigating new rounds appears to have stayed with the class ruling commodity production.

They suggest that climate change be labeled *so-cio-genic*, not anthropogenic, “to indicate that the driving forces derive from a specific social structure, rather than a species-wide trait.” [13] I sympathize with the desire for more politically accurate labels, but Marxists are a small minority in society at large and in the scientific organizations that make such decisions, so our preferences in such matters are very unlikely to prevail.

What ecosocialists can do—what we *must* do—is use every opportunity for dialogue with environmental scientists. As Dipesh Chakrabarty says, despite their limited social analysis and leanings toward populationism, the scientists who are publicizing the nature and extent of the crisis should not be viewed as opponents: “they are not necessarily anticapitalist scholars, and yet they clearly are not for business-as-usual capitalism either.” [14] Scientists who understand the threats posed by the Great Acceleration can be important allies in a movement to slow capitalism’s drive to disaster.

Most of these scientists show no awareness of Barry Commoner’s work, a neglect that reflects the disappearance of any critique of capitalism in mainstream environmentalism in the late twentieth century. Commoner was just too radical for the pale green NGOs that dominated green politics. Although he continued to make important contributions as a scientist and activist, all his books are now out of print, and, as noted above, he isn’t mentioned in any article on the Anthropocene or the Great Acceleration that I’ve found, despite the obvious relevance of his work.

An important part of establishing dialog and common activity with scientists should be making Commoner’s main works widely available again, and re-establishing his reputation as one of the most insightful theorists on the social causes of environmental destruction. As a shining example of how scientists can contribute to building movements for environmental and social justice, he can continue to

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make invaluable contributions to that cause in the 21st Century. Everyone who is concerned about the environmental crisis can learn a great deal from the pioneering ecologist who wrote:

The earth is polluted neither because man is some kind of especially dirty animal nor because there are too many of us. The fault lies with human society—with the ways in which society has elected to win, distribute, and use the wealth that has been extracted by human labor from the planet’s resources. Once the social origins of the crisis become clear, we can

begin to design appropriate social actions to resolve it. [15]

Ian Angus is an ecosocialist activist and writer based in eastern Ontario. He is editor of *Climate & Capitalism* (<http://climateandcapitalism.com>) and co-author of *Too Many People? Population, Immigration, and the Environmental Crisis* (Haymarket Books, 2011). This is an abridged version of the article that first appeared at <http://climateandcapitalism.com/2014/06/29/barry-commoner-great-acceleration/>

Endnotes

1. A possible exception is the disappearance of very large mammals in Europe, the Americas and Australia: some scientists believe humans hunted them to extinction.
2. Paul J. Crutzen and Eugene F. Stoermer, 'The Anthropocene.' *Global Change Newsletter* 41, May 2000, 17–18; Paul Crutzen, Geology of Mankind. *Nature*, January 2002, 23.
3. Barry Commoner, *Science and Survival*, Viking Press, 1966, 122.
4. Barry Commoner, *The Closing Circle: Nature, Man & Technology*, Alfred E. Knopf, 1971, 140.
5. Commoner, *Closing Circle*, 144.
6. Commoner, *Closing Circle*, 177.
7. Commoner, *Closing Circle*, 129.
8. Commoner, *Closing Circle*, 258–9.
9. Commoner, *Closing Circle*, 267–8.
10. Commoner, *Closing Circle*, 287.
11. Barry Commoner, *Making Peace With the Planet*, Pantheon, 1990, 7.
12. Oil, energy and capitalism: An unpublished talk by Barry Commoner, <http://climateandcapitalism.com/2013/07/30/exclusive-an-unpublished-talk-by-barry-commoner/>
13. Andreas Malm and Alf Hornborg, The geology of mankind? A critique of the Anthropocene narrative, *The Anthropocene Review*, vol. 1, 2014. <http://anr.sagepub.com/content/1/1/62>.
14. Dipesh Chakrabarty, The Climate of History: Four Theses, *Critical Inquiry*, vol. 35 No 2 (Winter 2009) 212.
15. Commoner, *Closing Circle*, 178.

“Climate Smart Agriculture” Is a Dangerous Hoax

by La Via Campesina

The statement below was published by La Via Campesina, the world’s largest organization of peasants and small farmers, on September 23, 2014, before the UN Climate Summit in New York City.

As women, men, peasants, smallholder family farmers, migrant, rural workers, indigenous, and youth of La Via Campesina, we denounce climate smart agriculture which is presented to us as a solution to climate change and as a mechanism for sustainable development. For us, it is clear that underneath its pretense of addressing the persistent poverty in the countryside and climate change, there is nothing new. Rather, this is a continuation of a project first begun with the Green Revolution in the early 1940s and continued through the 70s and 80s by the World Bank’s Poverty Reduction projects and the corporate interests involved.

These projects, such as the so-called Green Revolution, decimated numerous peasant economies, particularly in the South, to the extent that many countries, like México for example, that were self-sufficient in food production, became dependent on the North to feed their population within a short couple of decades.

The result of these projects, dictated by industrial capital’s need for expansion, was the coopting of traditional agricultural producers and production, and their insertion into the present industrial agriculture and food regime—a regime that is based on increased

once net food exporters into net food importers. This is not so much that they cannot produce food, but because now, instead, they produce commodity crops used to produce industrialized foods, fuels, manufactured products for sale, and for speculation in the world financial markets.

Today, some of the same actors of these previous projects, such as the World Bank, are the forces behind the imposition of climate smart agriculture as a solution to climate change and to increase income of the rural poor using the same failed thesis that to increase incomes one must increase productivity. It is clear that the intention is to create a market for the Green Revolution as a solution to climate change, poverty, and as a proposal for sustainable development in rural areas.

We identify this as part of a larger process of “green” structural adjustment projects required by an economic system and the political elites in distress, because they have exhausted other places for enormous speculative financial investments and now see agriculture and agricultural land as the new frontier.

Climate smart agriculture begins with deception by not making a differentiation between the negative effects of industrialized agriculture and the real solutions offered by traditional sustainable peasant agri-

The agricultural activity that has most contributed to greenhouse gas emissions has been industrial agriculture.

use of toxic chemicals, dependent on fossil fuel inputs and technology, increasing exploitation of agricultural and rural workers, with its resulting loss of biodiversity; a food system that is now under the control of corporations and large industrial farmers, the main beneficiaries of these projects.

The result has been the loss of food security and sovereignty, transforming entire countries that were