

Capitalism in Wonderland

RICHARD YORK, BRETT CLARK, AND JOHN BELLAMY FOSTER

In a recent essay, “Economics Needs a Scientific Revolution,” in one of the leading scientific journals, *Nature*, physicist Jean-Philippe Bouchaud, a researcher for an investment management company, asked rhetorically, “What is the flagship achievement of economics?” Bouchaud’s answer: “Only its recurrent inability to predict and avert crises.”¹ Although his discussion is focused on the current worldwide financial crisis, his comment applies equally well to mainstream economic approaches to the environment—where, for example, ancient forests are seen as non-performing assets to be liquidated, and clean air and water are luxury goods for the affluent to purchase at their discretion. The field of economics in the United States has long been dominated by thinkers who unquestioningly accept the capitalist status quo and, accordingly, value the natural world only in terms of how much short-term profit can be generated by its exploitation. As a result, the inability of received economics to cope with or even perceive the global ecological crisis is alarming in its scope and implications.

Bouchaud penetratingly observes, “The supposed omniscience and perfect efficacy of a free market stems from economic work done in the 1950s and 1960s, which with hindsight looks more like propaganda against communism than plausible science.” The capitalist ideology that undergirds economics in the United States has led the profession to be detached from reality, rendering it incapable of understanding many of the crises the world faces. Mainstream economics’ obsession with the endless growth of GDP—a measure of “value added,” not of human well-being or the intrinsic

RICHARD YORK is coeditor of *Organization & Environment* and associate professor of sociology at the University of Oregon. BRETT CLARK is assistant professor of sociology at North Carolina State University. They are coauthors with JOHN BELLAMY FOSTER of *Critique of Intelligent Design: Materialism versus Creationism from Antiquity to the Present* (Monthly Review Press, 2008). JOHN BELLAMY FOSTER is editor of *Monthly Review* and professor of sociology at the University of Oregon. He is the author of *The Ecological Revolution: Making Peace with the Planet* (Monthly Review Press, 2009) among numerous other works.

worth of ecosystems and other species—and its failure to recognize the fundamental ecological underpinnings of the economy, has led to more than simply an inability to perceive the deterioration of the global environment. In fact, the problem goes much deeper. Orthodox economics, like the capitalist system that it serves, leads to an “Après moi le déluge!” philosophy that is anything but sustainable in orientation. As Naomi Klein has said, there is something perversely “natural” about *Disaster Capitalism*.²

Economists in Wonderland

The inherent incapacity of orthodox or neoclassical economics to take ecological and social costs into account was perhaps best exemplified in the United States by the work of Julian Simon. In articles and exchanges in *Science* and *Social Science Quarterly* and in his book *The Ultimate Resource* published at the beginning of the 1980s, he insisted that there were no serious environmental problems, that there were no environmental constraints on economic or population growth, and that there would never be long-term resource shortages. For example, he infamously claimed that copper (an element) could be made from other metals and that only the mass of the universe, not that of the earth, put a theoretical limit on how much copper could be produced. The free market if left unfettered, he contended, would ensure continuous progress into the distant future. These and other dubious assertions led ecologist Paul Ehrlich to refer to Simon as “an economist in Wonderland.”³

Apologists for capitalism continue to occupy Wonderland, because it is only in Wonderland that environmental problems either do not really exist or can be solved by capitalism, which can also improve the quality of life for the mass of humanity. Bjørn Lomborg, a Danish statistician and political scientist (now an adjunct professor at the Copenhagen Business School), picked up Simon’s torch, publishing his salvo aimed at environmentalism, *The Skeptical Environmentalist*, in 2001. Lomborg argued, for example, that attempting to prevent climate change would cost more and cause more harm than letting it happen. Lomborg’s book was immediately praised to the skies by the mass media, which was looking for a new anti-environmental crusader. Soon after the publication of *The Skeptical Environmentalist*, environmental scientists documented the countless flaws (not all of them inadvertent) in Lomborg’s

reasoning and evidence. *Scientific American* devoted part of an issue to four articles by leading scientists sharply criticizing Lomborg. As a result of its serious flaws, the book was rejected by the scientific community. Yet, despite the adamant rejection of *The Skeptical Environmentalist* by natural scientists, all of this seemed only to add to Lomborg's celebrity within the corporate media system. *The Economist* touted the book and its conclusions, proclaiming it to be "one of the most valuable books on public policy," having dispelled the notion of "looming environmental disaster" and "the conviction that capitalism is self-destructive."⁴ *Time* magazine in 2004 designated Lomborg as one of the 100 most influential people in the world; while in 2008, Britain's *Guardian* newspaper labeled him as one of the "50 people who could save the planet."

In 2003 Lomborg organized what he called the "Copenhagen Consensus" to rank the world's leading problems. This was carried out through the writing of a number of reports on various global priorities by a group of hand-picked, mainly economic authorities, and then the subsequent ranking of these problems by eight "experts"—all economists, since economists were declared to be the only experts on "economic prioritization," i.e., decisions on where to put society's resources. The eight Copenhagen Consensus economists not surprisingly all ranked climate change at or near the bottom of the world's agenda, backing up Lomborg's position.⁵

Lomborg's 2007 book *Cool It: The Skeptical Environmentalist's Guide to Global Warming* was an extended attack on the Kyoto Protocol and all attempts to carry out substantial cuts in greenhouse gas emissions. For Lomborg the essential point was that, "all major peer-reviewed economic models agree that little emissions reduction is justified." He relied particularly on the work of Yale economist William Nordhaus, a leading economic contributor to the discussion of global warming, who has opposed any drastic reductions in greenhouse gases, arguing instead for a slow process of emissions reduction, on the grounds that it would be more economically justifiable.⁶

Economists versus Natural Scientists

Needless to say, establishment economists, virtually by definition, tend to be environmental skeptics. Yet they have an outsized influence on climate policy as representatives of the dominant end of capitalist society, before which all other ends are subordinated.

(Social scientists other than economists either side with the latter in accepting accumulation as the appropriate goal of society or are largely excluded from the debate.) In sharp contrast, natural and physical scientists are increasingly concerned about the degradation of the planetary environment, but have less direct influence on social policy responses.

Mainstream economists are trained in the promotion of private profits as the singular “bottom line” of society, even at the expense of larger issues of human welfare and the environment. The market rules over all, even nature. For Milton Friedman the environment was not a problem since the answer was simple and straightforward. As he put it: “ecological values can find their natural space in the market, like any other consumer demand.”⁷

Natural scientists, as distinct from economists, however, typically root their investigations in a materialist conception of nature and are engaged in the study at some level of the natural world, the conditions of which they are much more disposed to take seriously. They are thus much less inclined to underrate environmental problems.

The conflict between economists and natural scientists on global warming came out in the open as a result of an article by Nordhaus that appeared in the leading natural science journal, *Science*, in 1993. Nordhaus projected that the loss to gross world output in 2100 due to continuation of global warming trends would be insignificant (about 1 percent of GDP in 2100). His conclusion clearly conflicted with the results of natural science since these same business-as-usual trends could lead, according to the UN Intergovernmental Panel on Climate Change (IPCC) scenarios at the time, to as much as a 5.8°C (10.4°F) increase in average global temperature, which for scientists was nothing less than catastrophic for civilization and life itself. Nordhaus had concluded in his article that attempts at emissions stabilization would be worse than inaction. This led to a number of strong replies by noted natural scientists (in letters to *Science*), who viewed Nordhaus’s analysis as patently absurd.

Nordhaus subsequently defended his views by surveying a number of influential economists and scientists, asking them for their best guesstimates, publishing his results in the *American Scientist* in 1994. The economists he chose to survey agreed with him that climate change would have little effect on the economy. Yet, the

natural scientists saw the consequences as potentially catastrophic. One physical scientist responded by claiming that there was a 10 percent chance under present trends of the complete destruction of civilization—similar views would likely be even more common today. Nordhaus observed that those who knew most about the economy were optimistic. Stephen Schneider, a Stanford biologist and climate scientist (and a leading critic of both Lomborg and Nordhaus), retorted that those who knew most about the environment were worried. As Schneider summed up the debate in 1997 in his *Laboratory Earth*: “Most conventional economists...thought even this gargantuan climate change [a rise in average global temperature of 6°C]—equivalent to the scale of change from an ice age to an interglacial epoch in a hundred years, rather than thousands of years—would have only a few percent impact on the world economy. In essence, they accept the paradigm that society is almost independent of nature.”⁸

Orthodox economists, it is true, often project economic costs of global warming in 2100 to be only a few percentage points and therefore hardly significant, even at levels of climate change that would endanger most of the “higher” species on the planet and human civilization itself, costing hundreds of millions, if not billions, of human lives.

The failure of economic models to count the human and ecological costs of climate change should not surprise us. Bourgeois economics has a carefully cultivated insensitivity to human tragedy (not to mention natural catastrophe) that has become almost the definition of “man’s inhumanity to man.” Thomas Schelling, a recipient of the Bank of Sweden’s Nobel Memorial Prize in Economic Sciences, and one of Lomborg’s eight experts in the Copenhagen Consensus, is known for arguing that since the effects of climate change will fall disproportionately on the poorer nations of the global South, it is questionable how much in the way of resources the rich nations of the global North should devote to the mitigation of climate trends. (Schelling in his Copenhagen Consensus evaluation ranked climate change at the very bottom of world priorities.)⁹ Here one can’t help but be reminded of Hudson Institute planners, who in the process of proposing a major dam on the Amazon in the early 1970s contended in effect—as one critic put it at the time—that “if the flooding drowns a few tribes who were not evacuated because they were supposed to be on higher ground, or wipes out a few forest species, who

cares?”¹⁰ Similarly, while chief economist of the World Bank, Lawrence Summers, now Obama’s top economic advisor, wrote an internal World Bank memo in which he stated: “the economic logic behind dumping a load of toxic waste in the lowest-wage country is impeccable and we should face up to that.” He justified this by arguing: “The measurement of the costs of health-impairing pollution depends on the foregone earnings from increased morbidity and mortality. From this point of view a given amount of health-impairing pollution should be done in the country with the lowest cost, which will be the country of the lowest wages.”¹¹

Discounting the Future

Nordhaus—who ranks as one of the most influential mainstream economists on global warming today and is a cut above figures like Simon and Lomborg—has proposed, in his 2008 book *A Question of Balance: Weighing the Options on Global Warming Policies*, a go-it-slow strategy on combating greenhouse emissions.¹² Nordhaus demonstrates here that despite impressive credentials he remains hobbled by the same ideology that has crippled other mainstream economists. In essence this comes down to the belief that capitalism offers the most efficient response to questions of resource use, and indeed a sufficient answer to the world’s problems.

A Question of Balance presents a fairly standard economic argument about how to address global climate change, although it is backed by Nordhaus’s own distinctive analyses using sophisticated modeling techniques. He acknowledges that global climate change is a real problem, and is human generated, arguing that it is necessary slowly to move away from carbon-emitting energy sources. Nevertheless, the central failures of his approach are that it assigns value to the natural environment and human well-being using standard economic measures that are fundamentally inadequate for this purpose, and that it fails properly to incorporate the possibility that an ecological collapse could utterly undermine the economy, and indeed the world as we know it. These failures, which are those of mainstream economics, are clearly apparent in his approach to discounting for purposes of estimating how much effort should be put into reducing carbon emissions. Roughly speaking, Nordhaus argues we should only invest a modest amount of effort in reducing carbon emissions in the short term and slowly increase this over time, because he favors a high discount rate.

The issue of discounting may seem esoteric to most people, but not to economists, and deserves some examination. Discounting is fundamentally about how we value the future relative to the present—insofar as it makes any sense at all to attach numbers to such valuations. The “discount rate” can be thought of as operating in inverse relation to compound interest. While “compounding measures how much present-day investments will be worth in the future, discounting measures how much future benefits are worth today.”¹³ Estimation of the discount rate is based on two moral issues. First, there is the issue of how we value the welfare of future generations relative to present ones (the time discount rate). As Nordhaus states, “A zero discount rate means that all generations into the indefinite future are treated the same; a positive discount rate means that the welfare of future generations is reduced or ‘discounted’ compared with nearer generations.” A catastrophe affecting humanity fifty years from now, given a discount rate of 10 percent, would have a “present value” less than 1 percent of its future cost. Second, there is the issue of how wealthy future generations will be relative to present ones and whether it is appropriate to shift costs from the present to the future. If we assume a high rate of economic growth into the indefinite future, we are more likely to avoid investing in addressing problems now, because we assume that future generations will be wealthier than we are and can better afford to address these problems, even if the problems become substantially worse.¹⁴

The difficulty of the discount rate, as environmental economist Frank Ackerman has written, is that, “it is indeed a choice; the appropriate discount rate for public policy decisions spanning many generations cannot be deduced from private market decisions today, or from economic theory. A lower discount rate places a greater importance on future lives and conditions of life. To many, it seems ethically necessary to have a discount rate at or close to zero, in order to respect our descendants and create a sustainable future.”¹⁵ Indeed, the very notion of sustainability is about maintaining the environment *for future generations*.

Economic growth theorist Roy Harrod argued in the 1940s that discounting the future based on a “pure time preference” (the myopic preference for consumption today apart from all other considerations) was a “polite expression for rapacity.” A high discount rate tends to encourage spending on policies/projects with short-

term benefits and long-term costs as opposed to ones with high up-front costs and long paybacks. It therefore encourages “wait-and-see” and “go-it-slow” approaches to impending catastrophes, such as climate change, rather than engaging in strong preventive action.¹⁶

Nordhaus, like most mainstream economists, through his support of a high discount rate, places a low value on the welfare of future generations relative to present ones, and assumes, despite considerable uncertainty in this regard, that future generations will be much wealthier than present ones. This leads him to argue against large immediate investments in curtailing climate change. He advocates putting a tax on carbon of \$30 to \$50 per ton and increasing this to about \$85 by mid-century. Taxing carbon at \$30 a ton would increase the price of gasoline by a mere seven cents a gallon, which gives one a sense of the low level of importance Nordhaus places on curtailing climate change as well as the future of humanity and the environment. Nordhaus has tripled his estimate of the loss to global economic output due to climate change in 2100, moving from his earlier estimate of almost 1 percent to nearly 3 percent in his latest study.¹⁷ Still, such losses are deemed insignificant, given a high discount rate, in comparison to the costs that would be incurred in any attempt to curtail drastically climate change today, leading Nordhaus to advocate a weak-kneed response.

Nordhaus is particularly interested in countering the arguments presented in *The Economics of Climate Change* (commonly known as *The Stern Review*), the report written by Nicholas Stern (former chief economist of the World Bank) for the British government, which advocates immediate and substantial investments aimed at reducing carbon emissions. Stern, deviating from the practice of most orthodox economists, uses a low discount rate, arguing that it is morally inexcusable to place low value on the welfare of future generations and to impose the costs of the problems we generate on our descendants. Nordhaus discounts the future at roughly 6 percent a year; Stern by 1.4 percent. This means that for Stern having a trillion dollars a century from now is worth \$247 billion today, while for Nordhaus it is only worth \$2.5 billion.¹⁸ Due to this, Stern advocates imposing a tax on carbon of greater than \$300 per ton and increasing it to nearly \$1,000 before the end of the century.¹⁹ Lomborg in the *Wall Street Journal* characterized the *Stern Review*

as “fear-mongering,” and referred to it in *Cool It!* as a “radical report,” comparing it unfavorably to Nordhaus’s work.²⁰

The Unworldly Economists

It is important to recognize that the difference displayed here between Nordhaus and Stern is fundamentally a moral, not a technical, one. Where they primarily differ is not on their views of the science behind climate change but on their value assumptions about the propriety of shifting burdens to future generations. This lays bare the ideology embedded in orthodox neoclassical economics, a field which regularly presents itself as using objective, even naturalistic, methods for modeling the economy. However, past all of the equations and technical jargon, the dominant economic paradigm is built on a value system that prizes capital accumulation in the short-term, while de-valuing everything else in the present *and everything altogether in the future*.

Some of the same blinders are in fact common in varying degrees to both Nordhaus and Stern. Nordhaus proposes what he calls an “optimal path” in economic terms aimed at slowing down the growth of carbon emissions. In his “climate policy ramp” emissions reductions would start slow and get bigger later, but would nonetheless lead eventually (in the next century) to an atmospheric carbon concentration of nearly 700 parts per million (ppm). This would present the possibility of global average temperature increases approaching 6°C (10.8°F) above preindustrial levels—a level that Mark Lynas in his *Six Degrees* compares to the sixth circle of hell in Dante’s *Inferno*.²¹

Indeed, with a level of carbon concentration much less than this, 500 ppm (associated with global warming on the order of 3.5°C or 6.3°F), the effects both on the world’s biological diversity and on human beings themselves would be disastrous. “A conservative estimate for the number of species that would be exterminated (committed to extinction)” at this level, according to James Hansen, director of NASA’s Goddard Institute for Space Studies, “is one million.” Moreover, rising sea levels, the melting of glaciers, and other effects could drastically affect hundreds of millions, conceivably even billions, of people. Hansen, the world’s most famous climatologist, argues that in order to avoid catastrophic change it is necessary to *reduce* atmospheric carbon to a level of 350 ppm.²²

Yet, the *Stern Review* itself, despite being designated as a “radical” and “fear-mongering” report by Lomborg, targets an atmospheric carbon concentration stabilization level of 480 ppm (550 ppm in carbon equivalent), which—if never reaching Nordhaus’s near 700 ppm peak (over 900 ppm carbon equivalent)—is sure to be disastrous, if the analysis of Hansen and most other leading climatologists is to be believed.²³ Why such a high atmospheric carbon target?

The answer is provided explicitly by the *Stern Review* itself, which argues that past experience shows that anything more than a 1 percent average annual cut in carbon emissions in industrial countries would have a significant negative effect on economic growth. Or as the *Stern Review* itself puts it, “it is difficult to secure emission cuts faster than about 1 percent a year except in instances of recession.”²⁴ So the atmospheric carbon target is determined not according to what is necessary to sustain the global environment, protect species, and ensure the sustainability of human civilization, but by what is required to keep the capitalist economy itself alive.

The starting point that led to Summers’s conclusion in his 1992 World Bank memo is in fact the same that underlies the analyses of both Nordhaus and Stern. Namely, human life in effect is worth only what each person contributes to the economy as measured in monetary terms. So, if global warming increases mortality in Bangladesh, which it appears likely that it will, this is only reflected in economic models to the extent that the deaths of Bengalis hurt the economy. Since Bangladesh is very poor, economic models of the type Nordhaus and Stern use would not estimate it to be worthwhile to prevent deaths there since these losses would show up as miniscule in the measurements. Nordhaus, according to his discount analysis, would go a step beyond Stern and place an even slighter value on the lives of people if they are lost several decades in the future. This economic ideology, of course, extends beyond just human life, such that all of the millions of species on earth are valued only to the extent they contribute to GDP. Thus, ethical concerns about the intrinsic value of human life and of the lives of other creatures are completely invisible in standard economic models. Increasing human mortality and accelerating the rate of extinctions are to most economists only problems if they undermine the “bottom line.” In other respects they are invisible: as is the natural world as a whole.

From any kind of rational perspective, i.e., one not dominated exclusively by the narrow economic goal of capital accumulation, such views would seem to be entirely irrational, if not pathological. In order to highlight the peculiar mindset at work it is useful to quote a passage from Lewis Carroll's *Through the Looking Glass*:

"The prettiest are always further!" [Alice] said at last, with a sigh at the obstinacy of the rushes in growing so far off, as, with flushed cheeks and dripping hair and hands, she scrambled back into her place, and began to arrange her new-found treasures.

What mattered it to her just then that the rushes had begun to fade, and to lose all their scent and beauty, from the very moment that she picked them? Even real scented rushes, you know, last only a very little while—and these, being dream-rushes, melted away almost like snow, as they lay in heaps at her feet—but Alice hardly noticed this, there were so many other curious things to think about.²⁵

A society that values above all else the acquisition of abstract value-added, and in the prospect lays waste to nature, in an endless quest for further accumulation, is ultimately an irrational society. What matters to it what it leaves wasted at its feet, as it turns elsewhere in its endless pursuit of more?

Mainstream economics, ironically, has never been a materialist science. There is no materialist conception of nature in what Joseph Schumpeter called its "preanalytic vision."²⁶ It exists in almost complete ignorance of physics (constantly contravening the second law of thermodynamics), and of the degradation of the biosphere. It sees the world simply in terms of an endless, enlarging "circular flow" of economic relations.

The ecological blinders of neoclassical economics, which excludes the planet itself from its vision, are well illustrated by a debate that took place within the World Bank, related by ecological economist Herman Daly. As Daly tells the story, in 1992 (when Summers was chief economist of the World Bank and Daly worked for the Bank) the annual *World Development Report* was to focus on the theme *Development and the Environment*:

An early draft contained a diagram entitled "The Relationship Between the Economy and the Environment." It consisted of a square labeled "economy," with an arrow coming in labeled "inputs" and an arrow going out labeled "outputs"—nothing more. I suggested that the picture failed to show the environment, and that it would

be good to have a large box containing the one depicted, to represent the environment. Then the relation between the environment and the economy would be clear—specifically, that the economy is a subsystem of the environment both as a source of raw material inputs and as a “sink” for waste outputs.

The next draft included the same diagram and text, but with an unlabeled box drawn around the economy like a picture frame. I commented that the larger box had to be labeled “environment” or else it was merely decorative, and that the text had to explain that the economy is related to the environment as a subsystem within the larger ecosystem and is dependent on it in the ways previously stated. The next draft omitted the diagram altogether.²⁷

To be sure, not all economics is as resolutely unworldly as this. Nicholas Georgescu-Roegen, an economist critical of the anti-ecological orientation of economics—and the founder of the heterodox tradition known as ecological economics, which builds into its preanalytic vision the notion that the economy is in fact materially limited by physics and ecology—explained that the drive for continuous social wealth and economic profit increased the ecological demands placed on nature, expanding the scale of environmental degradation. He highlighted the error of pretending that the economy could be separated from ecology. Others, like Herman Daly, and Paul Burkett in the Marxist tradition, have pushed forward this notion of ecological economics.²⁸ Yet, these ecological economists remain on the margins, excluded from major policy decisions and academic influence.

The Juggernaut of Capital

Mainstream economists see themselves as engaged in the science of economic growth. Nevertheless, the assumption of endless economic growth, as if this were the purpose of society and the way of meeting human needs, seems naïve at best. As Daly says, “an ever growing economy is biophysically impossible.”²⁹ The Wonderland nature of such an assumption is particularly obvious in light of the fact that the very underpinning of the economy, the natural environment itself, is being compromised.

Marx did not miss the importance of this social-ecological relationship. He pointed out that humans are dependent upon nature, given that it provides the energy and materials that make life possible. While capitalists focused on exchange value and short-term

gains, Marx explained that the earth is the ultimate source of all material wealth, and that it needed to be sustained for “successive generations.” The “conquest of nature” through the endless pursuit of capital, which necessitated the constant exploitation of nature, disrupted natural cycles and processes, undermining ecosystems and causing a metabolic rift. Engels warned that such human actions left a particular “stamp...upon the earth” and could cause unforeseen changes in the natural conditions that exact the “revenge” of nature.³⁰

Today carbon dioxide is being added to the atmosphere at an accelerating rate, much faster than natural systems can absorb it. Between 2000 and 2006, according to Josep G. Canadell and his colleagues, in their article in the *Proceedings of the National Academy of Sciences*, the emissions growth rate increased as the global economy grew and became even more carbon intensive, meaning that societies emitted more carbon per unit of economic activity at the beginning of the new millennium than they did in the past. At the same time, the capacity of natural sinks to absorb carbon dioxide has declined, given environmental degradation such as deforestation. This contributed to a more dramatic upswing in carbon accumulation in the atmosphere than was anticipated.³¹ The juggernaut of capital overexploits both the resource taps and waste sinks of the environment, undermining their ability to operate and provide natural services that enhance human life.

There are many good reasons to think that the patterns and processes which held for the past one hundred years—e.g., economic growth—may not hold for the next one hundred, a point on which the present economic crisis should perhaps focus our attention. Justifying shifting costs from the present to the future based on the assumption that future generations will be richer than present ones is highly dubious. In relation to the economy as well as the ecology the future is highly uncertain, though current trends clearly point to disaster. If global climate change, not to mention the many other interconnected environmental problems we face, has some of the more catastrophic effects that scientists predict, economic growth may not only be hampered, but the entire economy may be undermined, not to mention the conditions of nature on which we depend. Therefore, future generations may be much poorer than present ones and even less able to afford to fix the problems we are currently creating.

In addition, the growth mania of neoclassical economists focuses on the kinds of things, mainly private goods reflecting individual interests, which comprise GDP, while collective goods and the global commons are devalued in comparison. It therefore encourages an economic bubble approach to the world's resources that from a deeper and longer perspective cannot be maintained.

For all of these reasons, the current economic order tends to mismeasure the earth and human welfare. Capitalism, in many respects, has become a failed system in terms of the ecology, economy, and world stability. It can hardly be said to deliver the goods in any substantive sense, and yet in its process of unrestrained acquisition it is undermining the long-term prospects of humanity and the earth.³²

If we cannot rely on orthodox economists to avert crises in financial markets, an area that is supposedly at the core of their expertise, why should we rely on them to avert ecological crises, the understanding of which requires knowledge of the natural environment that is not typically covered in their training? Nor is such an awareness compatible with the capitalist outlook that is embedded in received economics. Ehrlich has noted that, "Most economists are utterly ignorant of the constraints placed upon the economic system by physical and biological factors," and they fail to "recognize that the economic system is completely and irretrievably embedded in the environment," rather than the other way around. Due to these problems, he has stated pointedly that, "it seems fair to say that most ecologists see the growth-oriented economic system and the economists who promote that system as the gravest threat faced by humanity today." Furthermore, "the dissociation of economics from environmental realities can be seen in the notion that the market mechanism completely eliminates the need for concern about diminishing resources in the long run."³³

Plan B: The Technological Wonderland

The demonstrated failure of received economics to offer a solution to the environmental problem compatible with a capitalist economy has recently resulted in a Plan B to save the system through the proliferation of technological silver bullets for carrying out a "green revolution," without altering the social and economic relations of the system. Often this is presented in terms of an "investment strategy" geared to new Schumpeterian epoch-making

innovations of an environmental nature that will somehow save the day for both the economy and ecology, while restoring U.S. empire. Orthodox economists assume that the resource problems of today will force prices up tomorrow and that these higher prices will force the creation of new technology. The new army of environmental technocrats claims that the new innovations that will solve all problems are simply there waiting to be developed—if only a market is created, usually with the help of the state. Such views have been promoted in the last couple of years by figures like Thomas Friedman, Newt Gingrich, Fred Krupp of the Environmental Defense Fund, and Ted Nordhaus and Michael Shellenberger of the Breakthrough Institute. Krupp and Miriam Horn present this as a question of a competitive race between nations to be first in the green technologies and markets that will save the world. “The question,” they write, “is no longer just how to avert the catastrophic impacts of climate change, but which nations will produce—and export—the green technologies of the twenty-first century.”³⁴ These analyses tend to be big on the wonders of technology and the market, while setting aside issues of physics, ecology, the contradictions of accumulation, and social relations. They assume that it mostly comes down to energy efficiency (and other technical fixes) without understanding that in a capitalist system, growth of efficiency normally leads to an increase in scale of the economy (and further rifts in ecological systems) that more than negates any ecological gains made (a problem known as the Jevons Paradox).³⁵

Like the establishment economists, with whom they are allied, the technocrats promise to solve all problems while keeping the social relations intact. The most ambitious schemes involve massive geoengineering proposals to combat climate change, usually aimed at enhancing the earth’s albedo (reflectivity). These entail schemes like using high-flying aircraft, naval guns, or giant balloons to launch reflective materials (sulfate aerosols or aluminum oxide dust) into the upper stratosphere to reflect back the rays of the sun. There are even proposals to create “designer particles” that will be “self-levitating” and “self-orienting” and will migrate to the atmosphere above the poles to provide “sunshades” for the Polar Regions.³⁶ Such technocrats live in a Wonderland where technology solves all problems, and where the *Sorcerer’s Apprentice* has never been heard of. All of this is designed to extend the conquest of the earth rather than to make peace with the planet.

Ecological Revolution

If there was a definite beginning to the modern ecological revolution, this can be traced back to Rachel's Carson's *Silent Spring*. In attempting to counter what she called the "sterile preoccupation with things that are artificial, the alienation from the sources of our strength," that has come to characterize the capitalist Wonderland, Carson insisted that it was necessary to cultivate a renewed *Sense of Wonder* toward the world and living beings. Yet, it was not enough, as she was to demonstrate through her actions, merely to *contemplate* life. It was necessary also to *sustain* it, which meant actively opposing the "gods of profit and production"—and their faithful messengers, the dominant economists of our time.

Notes

1. Jean-Philippe Bouchaud, "Economics Needs a New Scientific Revolution," *Nature* 455 (October 30, 2008): 1181.
2. See Naomi Klein, *The Shock Doctrine: The Rise of Disaster Capitalism* (New York: Henry Holt, 2007). "Après moi le déluge! is the watchword of every capitalist and every capitalist nation. Capital therefore takes no account of the health and length of life of the workers unless society forces it to do so." Karl Marx, *Capital*, vol. 1 (New York: Vintage, 1976), 381.
3. Paul R. Ehrlich, "An Economist in Wonderland," *Social Science Quarterly* 62 (1981): 44-49; Julian L. Simon, "Resources, Population, Environment: An Oversupply of False Bad News," *Science* 208 (June 27, 1980): 1431-37, "Bad News: Is It True?" *Science* 210 (December 19, 1980): 1305-8, "Environmental Disruption or Environmental Improvement?" *Social Science Quarterly* 62 (1981): 30-43, *The Ultimate Resource* (Princeton, NJ: Princeton University Press, 1981), "Paul Ehrlich Saying It Is So Doesn't Make It So," *Social Science Quarterly* 63 (1982): 381-5. For the rest of Ehrlich and colleagues' side of the exchanges, see: Ehrlich, "Environmental Disruption: Implications for the Social Sciences," *Social Science Quarterly* 62 (1981): 7-22, "That's Right—You Should Check It For Yourself," *Social Science Quarterly* 63 (1982): 385-7, John P. Holdren, Paul R. Ehrlich, Anne H. Ehrlich, and John Harte, "Bad News: Is It True?" *Science* 210 (December 19, 1980): 1296-1301.
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MONTHLY REVIEW

Fifty Years Ago

Ideology, as Marx and Engels originally used the term, is a false consciousness based on an interpretation of reality in terms of the special experience and particular interests of a dominant class. When it is in the ascendant, even an exploiting class may be able to see reality non-ideologically, that is to say, with sufficient clarity and objectivity to be able to understand what types of action are capable of promoting its true long-term interests. But the thought processes of a declining class inevitably become more and more ideological. Class interests and human interests become increasingly divorced; action to promote the one becomes less and less compatible with action to promote the other. In these circumstances, it becomes the function of ideology to disguise or hide the contradiction, and in so doing it perverts and distorts reality—eventually to the point where *any* form of rational action becomes impossible. This is the essential truth which is so concisely and brilliantly summed up in the Greek aphorism: *Whom the Gods would destroy they first made mad.*

—Leo Huberman and Paul M. Sweezy, "Whom the Gods Would Destroy," *Monthly Review*, May 1959.