

The Scale of Our Ecological Crisis

By John Bellamy Foster

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One of the problems that has most troubled analysts of global ecological crisis is the question of scale. How momentous is the ecological crisis? Is the survival of the human species in question? What about life in general? Are the basic biogeochemical cycles of the planet vulnerable? Although few now deny that there is such a thing as an environmental crisis, or that it is in some sense global in character, some rational scientists insist that it is wrong to say that life itself, much less the planet, is seriously threatened. Even the mass extinction of species, it is pointed out, has previously occurred in evolutionary history. Critics of environmentalism (often themselves claiming to be environmentalists) have frequently used these rational reservations on the part of scientists to brand the environmental movement as “apocalyptic.”

Lest one conclude that this is simply a political dispute between those on the side of nature and the greater part of humanity, on the one hand, and those who support the ecologically destructive status quo, on the other, it should be emphasized that the same question has been often raised within the left itself—and sometimes by individuals deeply concerned about environmental problems. An example of this is David Harvey’s new book, *Justice, Nature and the Geography of Difference* (1996). Harvey devotes considerable space in this work to criticizing my book, *The Vulnerable Planet: A Short Economic History of the Environment* (Monthly Review Press, 1994, 1999), for the “apocalyptic” character of its argument. In Harvey’s words,

[T]he postulation of a planetary ecological crisis, the very idea that the planet is somehow ‘vulnerable’ to human action or that we can actually destroy the earth, repeats in negative form the hubristic claims of those who aspire to planetary domination. The subtext is that the earth is somehow fragile and

that we need to become caring managers or caring physicians to nurse it back from sickness into health.... Against this it is crucial to understand that it is materially impossible for us to destroy the planet earth, that the worst we can do is to engage in material transformations of our environment so as to make life less rather than more comfortable for our own species being, while recognizing that what we do also does have ramifications (both positive and negative) for other living species....Politically, the millenarian and apocalyptic proclamation that ecocide is imminent has had a dubious history. It is not a good basis for left politics and it is very vulnerable to the arguments long advanced by [Julian] Simon and now by [Greg] Easterbrook, that conditions of life (as measured, for example, by life expectancy) are better now than they have ever been and that the doomsday scenario of the environmentalists is far-fetched and improbable.

Aside from the purely rhetorical flourishes—the use of such terms as “millenarian” and “apocalyptic” which because of the sense of religious fatalism associated with them imply something irrational in character (the wrath of God, the second coming) which has little to do with the arguments of most environmentalists—this can be taken as a serious criticism not only of *The Vulnerable Planet* but of ideas that have common currency in environmental circles. It is noteworthy that this same criticism, of being “apocalyptic,” has frequently been leveled at such figures as Henry David Thoreau, George Perkins Marsh, Rachel Carson, Paul Ehrlich and Barry Commoner—indeed at almost all figures who have contributed anything of importance to understanding the modern ecological crisis.

Naturally, some phrases utilized in the environmental discussion—such as *Silent Spring*, *The Closing Circle*, *Earth in the Balance*, *The End of Nature*, and *The Vulnerable Planet*—are metaphorical, and while pointing to real concerns are not to be taken too literally. When it comes to actual argument, though, most analysts attempt to present an accurate portrayal of the real dimensions of the problem. Thus the opening sentences of Chapter One of *The Vulnerable Planet* convey the exact sense in which the title of that work is to be understood: “Human society has reached a critical threshold in its relation to the environment. The destruction of the planet, in the sense of making it unusable for human purposes, has grown to such an extent that it now threatens the continuation of much of nature, as well as the survival and development of society itself.” It might have been added that the survival of the human species was also in doubt as a result of these very same processes.

All of this drives us back to our initial question: what is the proper scale with which to view our environmental crisis? This is an issue that was taken up

not too long ago by Stephen Jay Gould in an essay entitled “The Golden Rule: A Proper Scale for Our Environmental Crisis.” Gould begins his article by acknowledging the reality of some of the very facts cited by those who downplay the environmental crisis. Human beings he argues are powerless over the earth on a geological time scale (that is in terms of tens of millions of years):

All the megatonnage in all our nuclear arsenals yields but one ten-thousandth the power of the 10 km asteroid that might have triggered the Cretaceous mass extinction. Yet the earth survived that larger shock and, in wiping out dinosaurs, paved a road for the evolution of large mammals, including humans. We fear global warming, yet even the most radical model yields an earth far cooler than many happy and prosperous times of a prehuman past. We can surely destroy ourselves, and take many other species with us, but we can barely dent bacterial diversity and will surely not remove many million species of insects and mites. On geological scales, our planet will take good care of itself and let time clear the impact of any human malfeasance.

Having said this, however, Gould goes on to suggest that this way of thinking—predicated on a geological time-scale—is irrelevant where human time-scales are concerned. “We cannot threaten at geological scales,” Gould writes,

but such vastness has no impact upon us. We have a legitimately parochial interest in our own lives, the happiness and prosperity of our children, the suffering of our fellows. The planet will recover from a nuclear holocaust, but we will be killed and maimed by billions, and our culture will perish. The earth will prosper if polar icecaps melt under a global greenhouse, but most of our major cities, built at sea level as ports and harbors, will founder, and changing agricultural patterns will uproot our populations.

Our vision in contemporary society is normally limited to our own lifetime and that of a few generations that come before or after us. As a teacher in the realm of social science I know how difficult it is to get students to think in terms of historical time, which often means perceiving things on a scale of centuries or millennia. All of this, however, falls far short of a geological time scale, which exceeds the average life span of most species. In this sense it is reasonable to speak metaphorically of a world in which there is no more spring, or of a “vulnerable planet” when as Gould says the threatened reality is one of the elimination of human society and even the human species, along with innumerable, “higher” species of direct significance to human beings, as a result of the destruction that humanity is wreaking on its own life support systems. We are definitely speaking parochially: of “our ecological crisis” and

not of the demise of the earth or of the biosphere on a geological time-scale. Yet behind this concern lies the fact that even the basic biogeochemical processes of the planet—which human beings have come to see as quite fixed—are “vulnerable” to human transformation in ways that are likely to destroy the planet as a place for human habitation.

None of this of course is meant to deny the reality that, as Gould says, we can “barely dent bacterial diversity and will surely not remove many millions of species of insects and mites.” But to say that we cannot claim that the planet or the biosphere is “vulnerable” because such “lower” life forms will survive, or because the biosphere will recover over tens of millions of years is to deny the right of human beings to identify their fate and that of the species with which they are most closely connected with the fate of the planet. It is to insist on a geological way of thinking (the peculiar professional reality of geologists and paleontologists), which though of great scientific importance has little direct relevance for humanity’s own existence. It is as if one were to take the deep ecological viewpoint, which insists that we should view human beings as no more important—even in our own eyes—than any other species, to the level of absolute absurdity of denying that it matters whether we as a species utterly destroy our own moment on earth. It is to deny an essential anthropocentrism without which it is probably impossible for human beings to respond to the ecological crisis on the scale at which we must—that is in the largest human terms, which identifies our fate with that of the planet.

Harvey does not stop with a mere rejection of unreasoning “apocalypticism” but goes on to insist that the environmental crisis raises no more serious issue for human beings directly than our own comfort. “The worst” that we can do as a result of our environmental depredations, he says, is “to make life less rather than more comfortable.” To point to anything beyond this, we are told, opens one up to the criticisms of those like Julian Simon and Greg Easterbrook who accuse most environmentalists of being “doomsday prophets.”

To be sure, one should beware of any gross exaggeration of environmental problems. But those sympathetic to the environment should not be lulled by the likes of Simon and Easterbrook—whom Paul and Anne Ehrlich in their *Betrayal of Science and Reason* have dismissed as representatives of the current “brownlash” against environmentalism—into playing down the severity of the ecological crisis. It has been the world’s natural and physical scientists and not doomsday prophets or the scientifically uninformed who have been at the forefront in sounding the alarm with regard to global

ecological crisis. This can be seen by looking at the “World Scientists’ Warning to Humanity” initiated by the Union of Concerned Scientists and signed in 1992 by 1,575 of the world’s most distinguished scientists, including more than half of all living scientists awarded the Nobel prize. According to this carefully worded statement, representing the consensus of concerned scientists:

Human beings and the natural world are on a collision course. Human activities inflict harsh and often irreversible damage on the environment and on critical resources. If not checked, many of our current practices put at risk the future we wish for human society and the plant and animal kingdom, and may so alter the living world that it will be unable to sustain life in the manner that we know. Fundamental changes are urgent if we are to avoid the collision our present course will bring.

The World Scientists go on to emphasize that, “The environment is suffering critical stress” in such areas as the atmosphere, the oceans, water resources, soil, forests, and living species. “The irreversible loss of species, which by 2100 may reach one-third of all species now living is especially serious.” Their conclusion is unmistakably clear: “We the undersigned, senior members of the world’s scientific community, hereby warn all humanity of what lies ahead. A great change in our stewardship of the Earth and the life on it is required if vast human misery is to be avoided and our global home on this planet is not to be irretrievably mutilated.”

The main reason that the ecology of the entire planet – as we know it – is now threatened with “irretrievable mutilation” has to do with the rapidly rising rate at which human beings are transforming the earth, on a scale that is now truly planetary in character, rivaling the basic biogeochemical processes of the planet. A few facts are worth noting. Somewhere between a third and a half of the land surface of the earth has been transformed by human action; the carbon dioxide content of the atmosphere has increased by some 30 percent since the Industrial Revolution; humanity now fixes more atmospheric nitrogen than all natural terrestrial sources combined; more than half of the fresh water sources are now put to use by human beings; 22 percent of marine fisheries are being overexploited (or have already been depleted), while 44 percent are at their limit of exploitation; one-quarter of the Earth’s bird species have been driven into extinction by human activities; rates of species extinction are now 100 to 1000 times those that existed prior to the human domination of the earth. In the words of a distinguished team of scientists writing in *Science* magazine: “The rates, scales, kinds, and combinations of changes occurring now are fundamentally different from

those at any other time in history; we are changing the Earth more rapidly than we are understanding it.”

Yet, the world’s natural and physical scientists, who have done so much to alert us to the dangers facing humanity and the planet as we know it are ill-equipped to understand the roots of the problem (or even the enormity of the threat looming before us), since they are generally unable to account for the social problems that underlie this ecological crisis, which demand explanations that go beyond such factors as biology, demography and technology—to address historical forms of production, and particularly capitalism.

Most scientific statements on the environmental crisis end with calls for more careful management. Often, as in the World Scientists’ Warning, specific measures are proposed such as reduced dependence on fossil fuels and the substitution of solar energy; cutbacks in consumption; the elimination of world poverty; controls on world population growth; and increased sexual equality for women, including the right to make their own reproductive decisions.

Within the mainstream scientific viewpoint these issues are reduced to questions of individual and collective will—and sometimes to rational choice by means of the market. Since little serious thought is given to the social problem and its relation to ecological sustainability, the views of mainstream environmentalists including most concerned scientists, as Hans Magnus Enzensberger once pointed out, often smack of a preacher’s sermon in which “the horror of the predicted catastrophe contrasts sharply with the mildness of the admonition with which we are allowed to escape.”

It is only when knowledge of ecological trends is coupled with an understanding of capital accumulation that the full extent of our global ecological crisis is apparent. Capitalism, as many of the world’s greatest economists—both mainstream and radical—have long acknowledged, is a system that can never stand still. If the investment frontier does not expand, and if profits do not increase, the circulation of capital will be interrupted and a crisis will ensue. A “stationary” capitalism is thus an impossibility. As Schumpeter expressed it, “capitalism is a process, stationary capitalism would be a *contradictio in adjecto*.” But at the dawn of the twenty-first century there is every reason to believe that the kind of rapid economic growth that the system demands in order to sustain its very existence—growth that now occurs within an orbit that encompasses the entire planet—is no longer ecologically sustainable, since it is biased toward high throughputs of

materials and energy, which put strains on both the planetary taps (resources) and sinks (the ecosystems that must absorb the resulting waste). All of this is made much worse by the social, economic and ecological waste resulting from the specific nature and form of capitalist production (going beyond the question of mere quantitative growth).

The fact that there are limitations to the sustainable human intervention into nature—which is a way of saying that human society necessarily coevolves with nature and is not really independent of it—does not mean that all hope of unending human progress should be abandoned or that there cannot be a continuing development of wealth, in the sense of the more complete satisfaction of genuine human needs. But it does mean that the human capacity to promote narrow instrumental gain by means of the “invisible hand” of the market for the benefit of a very few in accordance with the principle “après moi, le déluge!” inevitably comes up against certain general barriers imposed by nature, as well as more specific social and historical barriers.

In 1946 George Orwell wrote an essay entitled “Some Thoughts on the Common Toad.” In that essay he begins by observing tadpoles in a pool, which leads to the argument that spring, like nature in general, is ever resurgent; no matter how oppressive the society nature is ever a haven and a source of “surplus energy.” “So long as you are not actually ill, hungry, frightened or immured in a prison or a holiday camp, spring is still spring. The atom bombs are piling up in the factories, the police are prowling through the cities, the lies are streaming from the loudspeakers, but the earth is still going around the sun, and neither the dictators nor the bureaucrats, deeply as they disapprove of the process, are able to prevent it.” The mere resurgence every year of the spring, Orwell suggested, was a reality that had nothing whatever to do with the fact that “we are all groaning, or at any rate ought to be groaning, under the shackles of the capitalist system” and in that sense it completely lacked “a class angle.” Yet, “if a man cannot enjoy the return of the spring,” Orwell asked, “why should he be happy in a labour-saving Utopia?”

Today, a half-century later, Orwell’s belief that nature was somehow isolated from the social crisis of capitalism appears almost quaint. About a decade and a half after he authored his essay Rachel Carson wrote her environmental classic, *Silent Spring* which argued that,

Along with the possibility of the extinction of mankind by nuclear war, the central problem of our age has...become the contamination of man’s total

environment with such substances of incredible potential for harm—substances that accumulate in the tissues of plants and animals and even penetrate the germ cells to shatter or alter the very material of heredity upon which the shape of the future depends.

The source of this tragedy for Carson was that we live in “an era dominated by industry, in which the right to make a dollar at whatever cost is seldom challenged.” The symbolic representation of this crisis was for her a spring suddenly devoid of songbirds.

Ironically, given Orwell’s earlier argument, one of the leading symbols of the “silencing of the spring” today is vanishing frogs and toads. There are some 3,960 species of frogs and toads, the noisiest amphibians. (Herpetologists often refer to both as frogs.) Frogs first emerged 150 to 200 million years ago. Now the growing silence of the spring is deepened by the rapid disappearance of frog species all over the globe—often in areas remote from human contact. In 1990 the world’s herpetologists sounded the alarm, making “the vanishing frogs” one of the most widely heralded global ecological catastrophes of the decade. By 1994 a probable cause had been ascertained as a result of a series of experiments conducted in Oregon. UV-B, exposure to which is increasing due to the thinning of the ozone layer, was discovered to be killing frog eggs exposed to sunlight. Widely publicized, this phenomenon has become the proverbial canary in the coal mine, announcing to the world that the threat of a “silent spring” is more than ever before us and on a truly global scale.

There is no escaping this global ecological contradiction other than through forms of conscious, rational control that capitalism is inherently incapable of providing. “Freedom in this sphere [the realm of natural necessity],” Marx wrote in *Capital*, “can consist only in this, that socialized man, the associated producers, govern the human metabolism with nature in a rational way, bring it under their collective control instead of being dominated by it as a blind power, accomplishing it with the least expenditure of energy and in conditions most worthy and appropriate for their human nature.” The impairment under capitalism of the metabolic relation between human beings and the earth (or soil), he argued, created conditions compelling “its systematic restoration as a regulative law of social production, and in a form adequate to the full development of the human race.” Hence, the “conscious and rational treatment of the land as permanent communal property” is “the inalienable condition for the existence and reproduction of the chain of human generations” — what we refer to today as “sustainable development.”

There are, as Harvey warns us, dangers in such a call for rational social control of the human relation to nature. Capitalism too insists on the need for social controls—and seeks to bend the process in its own direction. Human “hubris”—insufficiently sensitive to ecological necessity—could create new disasters. All one can say in response is that confronting such problems is what social and ecological revolution is all about. To refuse to engage with the problem is to give up on humanity—and the earth—with at this point quite predictable results.

Notes

1. David Harvey, *Justice, Nature and the Geography of Difference* (Cambridge, Massachusetts: Blackwell, 1996), p. 194.
2. The epigraph for Carson’s book was taken from Albert Schweitzer who wrote: “Man has lost the capability to foresee and forestall. He will end by destroying the earth.” See the interesting discussion of “environmental apocalypticism” in Laurence Buell, *The Environmental Imagination* (Cambridge, Massachusetts: Harvard University Press, 1995), pp. 280-308.
3. Stephen Jay Gould, *Eight Little Piggies* (New York: W.W. Norton, 1993), p. 49.
4. Paul R. Ehrlich and Anne H Ehrlich, *Betrayal of Science and Reason: How Anti-Environmental Rhetoric Threatens Our Future* (Washington, D.C.: Island Press, 1996).
5. “World Scientists’ Warning to Humanity” in Ehrlich and Ehrlich, *Betrayal of Science and Reason*, pp. 242-50. See also John Bellamy Foster, John Jermier and Paul Shrivastava, “Global Environmental Crisis and Ecosocial Reflection and Inquiry,” *Organization & Environment*, vol. 10, no. 1 (March 1997), pp. 5-8.
6. Peter M. Vitousek, Harold A. Mooney, Jane Lubchenco, Jerry M. Melillo, “Human Domination of Earth’s Ecosystems,” *Science*, July 25, 1997, pp. 494-99.
7. Hans Magnus Enzensberger, “A Critique of Political Ecology,” *New Left Review*, 84 (March-April 1974), p. 26.
8. Joseph Schumpeter, *Essays* (Cambridge, MA.: Addison-Wesley Press, 1951), p. 293. John Stuart Mill is noteworthy among classical economists for believing that a capitalist economy would eventually terminate in a “stationary state” with little or no growth in population or output, and that this would allow for the development of a more

comfortable relation between human beings and nature (as well as an end to class struggle). Insofar as he believed that economic growth would gradually end with no resulting social disruption he greatly underestimated the contradictions built into the laws of motion of capitalism. Today certain ecological economists, such as Herman Daly, see themselves as direct descendants of Mill, arguing for a steady-state market economy as the answer to the world's ecological problems. These thinkers are, if anything, more unrealistic in their assessment of capitalism than Mill himself. See John Stuart Mill, *Principles of Political Economy*, Book IV, in Mill, *Collected Works* (Toronto: University of Toronto Press, 1965), pp. 752-57; Herman Daly, *Beyond Growth* (Boston: Beacon Press, 1996).

9. Karl Marx, *Capital*, vol. 1 (New York: Vintage, 1976), p. 381. Marx theorized the existence of general barriers to capital attributable to production in general (and to natural conditions) as well as more specific barriers attributable to capital. See Michael Lebowitz, "The General and Specific in Marx's Theory of Crisis," *Studies in Political Economy*, no. 7 (Winter 1982), pp. 5-25.
 10. George Orwell, *The Collected Essays, Journalism and Letters* (New York: Harcourt, Brace & World, 1968), pp. 140-45.
 11. Rachel Carson, *Silent Spring* (Boston: Houghton Mifflin, 1962), p. 8.
 12. *Ibid.*, p. 13.
 13. Kathryn Phillips, *Tracking the Vanishing Frogs* (New York: St. Martin's Press, 1994).
 14. Marx, *Capital*, vol 1, p. 638, *Capital*, vol. 3 (New York: Vintage, 1981), pp. 948-49, 959. See also István Mészáros, *The Necessity of Social Control* (London: Merlin, 1971). Reprinted in Mészáros, *Beyond Capital* (New York: Monthly Review Press, 1995).
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by John Bellamy Foster

I am not as worried as Harvey about Marxism succumbing to “the rhetoric of the environmentalists.” Historical materialism is a mode of inquiry (and a form of revolutionary praxis) that, if it has any lasting meaning, develops in response to changing conditions and new vernacular traditions.¹ *The Vulnerable Planet* was originally inspired by an essay entitled “The Vulnerable Earth: Toward a Planetary History” by U.S. environmental historian Donald Worster.² I wrote the book with two thoughts uppermost in my mind: that a historical materialism that did not embrace environmental issues was—in this day and age—hopelessly inadequate; and that an environmentalism not rooted in historical materialism was hopelessly lost. I am convinced that Marx’s critique of the political economy of capital also contained within it the fundamental elements of a political-ecological critique of capitalism. Yet to deal with ecological problems today, the classical legacy of Marxism is not enough, and must be supplemented with some of the insights of contemporary radical ecology.

These days skepticism toward science is widespread. Nevertheless, I was unprepared for Harvey’s contention that the views of the World Scientists’ (referring to the “World Scientists Warning to Humanity” signed in 1992 by over 1,500 senior scientists including more than half of the recipients of the Nobel Prize among living scientists—see my article above) “are every bit as problematic as the literature they rebut.” In his book Harvey refers to Greg Easterbrook and Julian Simon as examples of the opposing, anti-environmental (self-styled “ecorealist”) point of view.

Among those who signed the World Scientists’ Warning we find figures like Hans Bethe, Robert Gallo, Stephen Jay Gould, Stephen Hawking, Jane Lubchenco, Howard Odum, Linus Pauling, Ilya Prigogine, Carl Sagan, James Watson, and Edward O. Wilson. The credibility of scientists such as these in this area has to be considered far beyond that of an establishment journalist like Easterbrook who ends his book by assuring his readers that we can “terraform” Mars if we run out of ecological space on earth, thereby giving us “two biospheres for every one that exists today.” Simon, for his part, is a conservative, anti-environmental economist, best known as a proponent of what has been called the “weak sustainability hypothesis”: the idea that increases in economic wealth as measured by the market can substitute completely for any losses in natural wealth.

In dismissing the World Scientists' Warning Harvey claims that their metaphor of a "collision" of humanity with the earth is "abstract and ideological." Yet, this ignores the significance of this particular metaphor within contemporary science. The most recent of the great mass extinctions (there have been five extinctions in which 65 percent or more of species died out in a brief geological instant) was quite likely the result, many scientists now believe, of the collision of an asteroid with the earth some 65 million years ago—the end-Cretaceous extinction resulting in the demise of the dinosaurs. Hence, the collision metaphor implicitly invites a direct comparison of the human impact on the earth with that of the probable cause of the fifth mass extinction. Recently, scientists have warned that we are on the verge of "the sixth extinction" — this time at the hand of humanity.

I rubbed my eyes in disbelief when reading Harvey's charge that I had slipped into Malthusianism by referring to the "Malthusian term overpopulation" — in a litany of environmental problems on the opening page of chapter one of my book — and by "approvingly" quoting the Ehrlichs and other Malthusians at various points in my writing. It is news to me that "overpopulation" is simply a "Malthusian term." Marx and Engels pointed to the possibility of overpopulation, as have many Marxists and socialists. In his very first essay on political economy, for example, Engels observed that,

Even if Malthus were completely right, this transformation [i.e. social revolution] would have to be undertaken on the spot, for only this transformation and the education of the masses which it alone provides makes possible the moral restraint of the propagative instinct which Malthus himself presents as the most effective and easiest remedy for overpopulation.

Although it is true that Malthusians have made overpopulation the cause of all social and environmental problems, it does not follow logically that all those who consider population growth to be a problem or who at times use the term "overpopulation" — always to be understood in relation to existing social relations as well as the limits of the earth — are thereby Malthusian. In my book I attack Malthus and Malthusianism throughout. Where population issues are concerned I rely primarily on the theory of demographic transition (particularly as advanced by Barry Commoner in opposition to the views of Paul Ehrlich), which has a long history within socialist analysis. Moreover, the argument of the book clearly states that it is the accumulation of capital not population which is the leading source of environmental problems.

It is hard to know what to say when Harvey points to the fact that I occasionally quote favorably from the Ehrlichs and other Malthusians, as

evidence of my having slipped into Malthusianism—especially since Harvey has nothing to say about the specific content of the quotations to which he refers. The logic of this escapes me. Marx quoted approvingly from Ricardo and John Stuart Mill (noted Malthusians), and from Carlyle (an ultra-racist, author of *The Nigger Question*). This does not mean that Marx was in danger of slipping into Malthusianism or racism.

As a further example of my alleged tendency to succumb to the “rhetoric of environmentalism,” Harvey chastises me for “uncritically” taking “the principle ‘nature knows best’ from [Barry] Commoner.” Actually *The Vulnerable Planet* makes only passing reference to Commoner’s informal ecological law of “nature knows best” along with his other three informal laws (“everything is connected to everything else,” “everything must go somewhere,” and “there’s no such thing as a free lunch,” i.e. “nothing comes from nothing”) which were used merely as a springboard for the development of an argument on the anti-ecological tendencies of capitalism. And even then it can hardly be said that Commoner’s principle was introduced “uncritically.” As I observed in a footnote at this point in the argument: “Commoner’s third law should not be taken too literally.” As Haila and Levins write, “The conception that ‘nature knows best’ is relativized by the contingency of evolution.”

The argument of Haila and Levins (both distinguished representatives of ecological science, and in Levins’ case an important contributor to MR) is worth following further. Without categorically rejecting what Commoner himself describes as a mere “shorthand” expression, these authors attempt to define nature’s requirements more precisely. “Nature,” they tell us, “is mute, she does not give us explicit advice; she only forbids,” often only post factum.

For example, Commoner’s argument revolves around the introduction of synthetic chemicals. The petrochemical industry has managed to inject 70,000 new synthetic chemical compounds—not the product of evolution and not easily reabsorbable (at least on a human time scale)—into the biosphere. As Commoner writes, “these synthetic compounds are sufficiently different from...natural compounds to...disrupt normal biochemistry, leading to mutations, cancer, and in many different ways to death. In effect, the petrochemical industry produces substances that...cunningly enter the chemistry of life, and attack it.”

The problem is that these chemicals were introduced to promote profits without any accounting of the overall ecological effects. It was the post factum realization that nature forbids such heavy reliance on these “elixirs of

death" (as Carson called pesticides, one deadly branch of these new chemical compounds) that prompted Carson to write *Silent Spring* and *Commoner The Closing Circle*.

In the end what disturbs me most about Harvey's argument is the suggestion that we should back off from talking about ecological catastrophe since it is not a good basis for socialist politics. "A socialist politics that rests on the view that environmental catastrophe is imminent," he writes, "is a sign of weakness.... I am by no means as sanguine as many that a rhetoric of crisis and imminent catastrophe will sharpen our minds in the direction of class politics or even cooperative and democratic responses as opposed to a 'lifeboat ethic' in which the powerful pitch the rest overboard."

There are two issues here. First, the question of whether or not humanity is presently on a collision course with the earth is largely an empirical question. It is not one that we should deny or affirm on the grounds of political convenience.

Second, there is the issue of the basis of socialist politics. Harvey suggests that this must be rooted as directly as possible on class, which he sees at odds with the general thrust of ecological politics, with the exception of the environmental justice movement. I would agree that environmental politics (separated out from class politics) cannot be the basis for socialist politics. But it is only a narrow conception of class (and of the environment) that forces us to keep these elements separate. Marx repeatedly emphasized that the exploitation (or degradation) of the worker and of the soil were two sides of the same break in the social metabolism resulting from the logic of capital. Both have to be taken into consideration in any critique of capital. Capital, by its own nature, tends to go beyond its own absolute limits, and to undermine everything beyond itself in the attempt to absorb it within itself. What revolutionary ecology teaches us, and what it adds to the class struggle, is an understanding of the thoroughness with which the capital relation must be overthrown. Nowadays we can no longer afford to think in terms of justice alone, but we must also address the issue of sustainability. Socialism must become ecological without ceasing to be socialism. Indeed a good case can be made that in Marx's view the two were inseparable.

Notes

1. See Teodor Shanin, ed., *Late Marx and the Russian Road* (New York: Monthly Review Press, 1983), pp. 243-75.
2. Donald Worster, "The Vulnerable Earth: Toward a Planetary History," in Worster ed., *The Ends of the Earth* (New York: Cambridge University Press, 1988), pp. 3-20.
3. Harvey, *Justice, Nature and the Geography of Difference* (Cambridge, MA: Blackwell, 1996), p. 195.
4. Greg Easterbrook, *A Moment on the Earth* (New York: Viking, 1995), pp. 687-88.
5. See Richard Leakey and Roger Levin, *The Sixth Extinction* (New York: Doubleday, 1995), pp. 44-56.
6. Friedrich Engels, "Outlines of a Critique of Political Economy," in Karl Marx, *The Economic and Philosophic Manuscripts of 1844* (New York: International Publishers, 1967), p.221.
7. John Bellamy Foster, *The Vulnerable Planet* (New York: Monthly Review Press, 1994, 1999), p. 154.
8. Yrj Haila and Richard Levins, *Humanity and Nature* (London: Pluto Press, 1992), p. 13.
9. Barry Commoner, *Making Peace with the Planet* (New York: The New Press, 1992), pp. 13-14.

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