# The Ehrlichs Strike Again

Author: Hall, Charles A. S.

Source: BioScience, 59(6) : 522-524

Published By: American Institute of Biological Sciences

URL: https://doi.org/10.1525/bio.2009.59.6.11

# The Ehrlichs Strike Again

**The Dominant Animal: Human Evolution and the Environment.** Paul R. Ehrlich and Anne H. Ehrlich. Island Press, 2008. 440 pp., illus. $35.00 (ISBN 9781597260961 cloth).

In 1968 Paul R. Ehrlich published *The Population Bomb* and laid out his vision of a future: "In the 1970s and 1980s...hundreds of millions of people are going to starve to death in spite of any crash programs embarked upon now." This gloom-and-doom view—that Earth had pretty much reached its carrying capacity and people were imperiling the rest of nature—became an important academic concern. Paul Ehrlich became a celebrity of sorts (at least as much of one as we get in biology), where his erudition and wit made him a favorite on the Johnny Carson show. He was both greatly admired and greatly reviled for these efforts.

His book and talks certainly made a deep impression on me when I was a graduate student, and I have been following the debate about the relation of human population growth to the resources needed to support it fairly closely since then. But many of the particulars of *The Population Bomb* have not transpired, or did so only partly. Many technological optimists, such as Julian Simon, argued that in fact, human well-being and even the environment were improving. Then Ehrlich and his colleagues lost a very public bet to Simon about future prices of five metals.

For these and other reasons, the human-resource issue, once central to much or even most environmental and even biological research and discussion, disappeared in large part from public view and university debates. Few in power paid much attention to Ehrlich's message, having turned over Earth and our future essentially to growth-oriented economists and their objectives and methods of analyses, while conservative US politicians took the population issue out of public discourse and programs. The good economic times of the last couple of decades—at least for the affluent—seemed to support the optimists.

Undeterred, Paul Ehrlich and Anne Ehrlich, his wife, as well as a number of others continued the crusade to convince others of the very negative consequences of the world's burgeoning population and the general expansion of human impact. The Ehrlichs have hammered on the same general themes through most of their 30 or so subsequent books, whose analyses appeal to many other natural scientists but to only a few economists or other social scientists.

*The Dominant Animal: Human Evolution and the Environment* is the Ehrlichs' latest attempt to lay out the basic facts, but this book has a different flavor, predicated on this central theme: "How [has] one species, *Homo sapiens,* become so powerful as to significantly undermine the ability of the Earth's environment to support much of life—including our own"? To answer this question, the Ehrlichs review an enormous amount of the basic biological, psychological, and cultural processes that have led to the development of our species as it is now. They do this in a fact-filled, straightforward, and very readable way.

The first third of the book reviews the basics of biologists' (and some anthropologists') daily fare: Darwin, Mendel, sympatric and allopatric speciation, coevolution, and so on, all leading to the suitability of our genome for cultural evolution. This review leads to the middle third of the book, which focuses on a more social perspective: population growth, history as cultural evolution, and humans in relation to their ecosystems. Linking the two parts is a discussion of how the biotic and social particulars of humans, a result of adaptations to environments very different from the ones of today, caused humans to be superbly adapted for population growth and resource exploitation. All organisms exploit resources to survive and reproduce, but because of a curious alignment of selective pressures and resulting genomes, humans are superbly adapted to enormously step up their rate of resource exploitation. Such mechanisms explain how humans have been so successful in dominating so much of nature—at least for now.

The final third or so of the book is about how the very properties that led to human success in the past appear to be backfiring and leading to the destruction of the same resources that have nurtured our development for so long. The authors' basic approach is to use the IPAT equation, first published in *Science* by Paul Ehrlich and John Holdren, which states that environmental impact ($I$) is the product of human population ($P$), affluence ($A$), and some technological factor ($T$), whose impact can be either positive or negative. Since our political environment has shut out much of the discussion of population control, let alone affluence control, technology would appear to be our only hope for mitigating environmental impact.

The Ehrlichs' chapter-by-chapter examination of different environmental assaults, including impacts on the atmosphere and climate, biodiversity, ecosystem services, fisheries, and others leave little doubt that $T$ alone is insufficient to bail us out. There is little here that is new for the practicing biologist, but *The Dominant Animal* is nicely written, the examples are many and pertinent, and the focus on the relation of basic biology to the human condition should make the book appealing to beginning or even intermediate biologists. It would be a relatively painless way to review broadly but not deeply for comprehensive exams in traditional biology. Those who would benefit most from this book are intelligent readers who are skeptical about

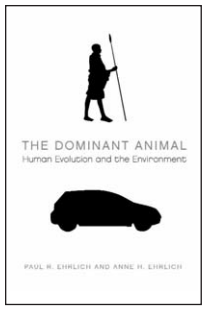
doi:10.1525/bio.2009.59.6.11

our environmental concerns or crises. The well-argued points and the comprehensive referencing should convince many of those readers that we are indeed facing myriad extremely difficult and important issues.

Since I teach my freshman course on the global environment and the evolution of human culture using many of the perspectives and materials the Ehrlichs' espouse, I am very much in agreement with most of what they write. I still prefer Robert Kaufmann and Cutler Cleveland's wonderful *Environmental Science* (McGraw-Hill, 2007) as a textbook, but certainly one could use *The Dominant Animal* effectively for a basic environmental course or seminar. The main disagreement I have with the Ehrlichs' assessment concerns their statement that we are in no danger of running out of fossil fuel (p. 293). Although technically I agree with that statement, I do believe we are in great danger of running out of the highest quality fossil fuels (oil and gas that can be exploited with a high net energy gain), and I also believe that the development of alternatives (which have a much lower net energy gain) will be enormously challenging.

Because for many the Ehrlichs appear to have lost the population-resource argument—or perhaps independent of anything academics have to say—humans continue on the same path of overpopulation and overconsumption, with governments and most economists fanning the flames. Although it is true that there are large efforts under way to conserve biodiversity and mitigate climate change, the fundamental population-resource issue has been at best on the back burner.

An important question for me has always been, Why have the Ehrlichs and others who understand the biophysical limits to growth not had more impact on national and international policies, or even on the discussion of policies in academia? Although Paul Ehrlich's earlier gloom-and-doom predictions have not come true, at least on the schedule he laid out in *The Population Bomb,* any casual perusal of major newspapers today shows that the issues he raised long ago have not gone away: the world today faces increasing hunger, disease, and unemployment fueled by shortages; increasingly unstable commodity prices; overcrowding; and burgeoning numbers of different ethnic groups trying to occupy mutual ancestral grounds that once had room enough for all. Even the much maligned limits-to-growth model is, as of this year, essentially right on track, as John W. Day Jr. and I discussed recently in "Revisiting the Limits to Growth after Peak Oil" (*American Scientist* 97: 230–237), and as shown independently by Graham Turner of Australia. As we watch the world economy tumble around us, as we learn of more and more environmental horrors, and as we understand increasingly that the basic neoclassical economic model does not transcend resource limits, it becomes ever more clear that we should have been paying far more attention to what the Ehrlichs had to say.




So is it a question of being wrong entirely or wrong just on the timing? I believe that cheap oil and petroleum-derived fertilizer allowed the world to avoid very serious population and resource issues for a few decades, but with peak oil, the price of oil is likely to continue to increase, and the chickens are coming home to the Ehrlichs' roost. Given that the issues raised in *The Dominant Animal: Human Evolution and the Environment* are among the most important ones confronting humanity, I find it interesting that most environmental science programs and papers focus on humans' impact on nature, not on humans themselves. Shouldn't more National Science Foundation programs, university departments, and other interested parties be devoted to these questions? In any event, now that we have apparently reached the global peak in oil production, many parts of the world are suffering from food shortages, and much of the world's industrial economy is crashing, it may be a good time for all of us to catch up with what the Ehrlichs are thinking. This book is certainly the place to start.

CHARLES A. S. HALL
*Charles A. S. Hall (e-mail: chall@esf.edu) is a professor with the Department of Environmental and Forest Biology at the State University of New York's College of Environmental Science and Forestry in Syracuse.*

## WHAT GOOD IS SCIENCE?

**Biology Under the Influence: Dialectical Essays on Ecology, Agriculture, and Health.** Richard Lewontin and Richard Levins. Monthly Review Press, 2007. 400 pp., illus. $22.95 (ISBN 9781583671573 paper).

*Biology Under the Influence* is a lightly edited collection of 31 essays by Richard Lewontin and Richard Levins. Many of the essays originally appeared in essentially the same form in columns Lewontin and Levins wrote for the journal *Capitalism, Nature, Socialism* in the late 1990s, though the essays span two decades since the publication of their book *The Dialectical Biologist.* Lewontin is Alexander Agassiz Research Professor at the Museum of Comparative Zoology at Harvard University; Levins, also at Harvard, is John Rock Professor of Population Sciences, Department of Population and International Health. Together, they write these essays not only as accomplished biologists but also as social and political activists deeply committed to action, knowledge, and theory.

Especially compelling are the essays "Organism and Environment," "False Dichotomies," and "The Return of Old

doi:10.1525/bio.2009.59.6.12