

# Paul Ehrlich vs. Julian Simon - Have We Reached the Limit?

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## Issues and Background

*Any scientist lives constantly with the possibility that he may be wrong. If he asks important questions, it is inevitable that some of the time he will come up with the wrong answers. Many are caught before they see print; many are enshrined in the scientific literature. I've published a few myself, as some of my colleagues would gladly testify. Therefore, it is important for you to consider that I, and many of the people who share my views, are just plain wrong, that we are alarmists, that technology or a miraculous change in human behaviour or a totally unanticipated miracle in some other form will 'save the day'. Naturally, I find this highly unlikely; otherwise I would not have written this book. But the possibility must be considered.*

~ Paul Ehrlich in "The Population Bomb", 1968

*Ehrlich and I have never debated face to face. He says that he has refused because I am a "fringe character". We have only locked horns directly in two cases, and in both incidents he has been demonstrably wrong. He and his colleagues based their criticism of my 1980 Science article (that conveyed some of the findings of this book) on what turned out to be a typographical error in a source. If I had been in their shoes, I would have been chagrined and embarrassed when this was discovered. But Ehrlich replied: "What scientist would phone the author of a standard source [as I did] to make sure there were not typos in a series of numbers showing a general trend with which every analyst in the field is completely familiar?" (That must be one of the most peculiar lines ever written by a member of a profession whose business is the search for scientific truth.) I consider it very significant that Ehrlich has suffered no apparent damage from being so wrong; I know of no mention of the incident in print.*

~ Julian Simon in "The Ultimate Resource 2", 1996

In an argument, somebody has to be right and somebody has to be wrong. Right? Not necessarily. I suppose they could both be wrong, they could even both be right or they could be partially right. But it's always difficult to admit this to your adversary. Such was the pushing and pulling and name-calling between Paul Ehrlich and Julian Simon that neither could see their relationship as anything other than adversarial.

Paul Ehrlich, a Stanford University biologist, wrote his book *The Population Bomb* in 1968. In it he warned of doom and gloom - resource depletion, species extinction and a human population so large that as a species we would face mass poverty, famine, starvation and death. According to Ehrlich, the Earth had reached its carrying capacity long ago and we were living on borrowed time.

Julian Simon, a University of Maryland economist, has written several books on population including: *The Ultimate Resource*; *The Ultimate Resource 2*; *The Economics of Population Growth*, *The State of Humanity*; *Population Matters*; and *Hoodwinking the*

Nation (published posthumously). Simon thought that all of the doom and gloom of Ehrlich was nothing but nonsense.

Ehrlich and others believed the Earth's resources were becoming scarcer due to an expanding population using them at an increased rate. Therefore he predicted that the prices of these resources should increase. Simon countered Ehrlich's argument by saying that an increasing population was a sign of economic vigor, which drove technological advances such that costs of production and other factors would decrease the price of these resources. In 1980, Simon then offered Ehrlich a bet. Ehrlich could choose any five raw materials he wanted. Simon sold Ehrlich an option to buy an amount of each raw material worth \$200 in 1980 dollars. If the prices increased over the next ten years, Simon would pay Ehrlich; however, if the prices decreased over the same time period, Ehrlich would have to pay Simon. Ehrlich chose five metals: copper, chrome, nickel, tin and tungsten. The bet was on. Ten years later, after adjusting for inflation, just as predicted the prices of all five metals went down. Ehrlich had lost. He sent Simon a check and nothing else. Simon offered to bet again and up the ante to \$20,000; Ehrlich declined.

I guess the question we should ask though, is does a bet such as that between Simon and Ehrlich really prove that the Earth isn't reaching its carrying capacity? Perhaps all it proves is that Simon was a better economist than Ehrlich. Perhaps what it says is that even though we are using our resources faster than we have in the past, people just weren't willing to pay as much for them.

Let's apply Simon's logic to another commodity, petroleum. In 1980 the price of a barrel of sweet crude oil was approximately \$32. By 1990, the price had fallen to \$20 per barrel. According to Simon this would mean that we have more oil than we had before and that we weren't running out of oil. Even the most optimistic oil company executive knows that oil will run out, it's merely a question of when.

If we believe Paul Ehrlich, the population of the Earth will crash to about 1.5 billion and the population of the United States to just under 23 million. If we believe Julian Simon we can continue to add millions upon millions of people *ad infinitum*. Surely, the real answer must be somewhere in between. In either case, while it's true that exponential growth of the population increases our numbers greatly, populations don't grow exponentially forever. They slow; they speed up, they level off depending on many factors. For example, if there isn't enough food to feed a population some of the population dies off until a point where the population can be sustained. Unfortunately, as we continue to add people, who need space to live, the space available to grow food decreases.

It would be nice to be able to predict the future of the Earth and humankind, but we can't. What we can do is look to the future with the notion that not all resources last forever and that once we figure out how to insure clean air and water and an adequate food supply for every human on the planet, everything else will work itself out.

## Primary Resources and Data

- *Paul Ehrlich and the Population Bomb*  
[http://www.pbs.org/kqed/population\\_bomb/](http://www.pbs.org/kqed/population_bomb/)  
In 1997 the World Health Organization released this statement to the press detailing a meeting that had been held in Geneva in which global experts on malaria pledged better cooperation.
- *Paul Ehrlich Gets Stanford "Reviewed"*  
<http://www.sepp.org/contro/ehrllich.html>  
The Stanford Review is Stanford University's alternative student newspaper. In this article reporter Mike Roth outlines why he thinks Paul Ehrlich has engaged in "environmental tomfoolery".
- *Book Review: The Stork and the Plow by Paul and Anne Ehrlich*  
<http://www-formal.stanford.edu/jmc/progress/ehrllich/ehrllich.html>  
John McCarthy reviews the Ehrlich's 1995 book "The Stork and the Plow". McCarthy states that while "more moderate than Ehrlich's 1960s and 1970s views" he still has "plenty to disagree with."
- *The Doomslayer by Ed Regis*  
[http://www.wired.com/wired/archive/5.02/ffsimon\\_pr.html](http://www.wired.com/wired/archive/5.02/ffsimon_pr.html)  
Ed Regis at Wired Magazine takes an in-depth look at Julian Simon the University of Maryland economist and archrival of Paul Ehrlich.
- *Julian Simon - A Reply to My Critics*  
<http://www.juliansimon.com/reply-critics.html>  
In 1996 Julian Simon wrote "The Ultimate Resource 2" a follow-up to his 1980 book "The Ultimate Resource". At this point, long used to people criticizing his ideas, in particular, Paul Ehrlich, he included in this second edition a reply to those who criticized the first edition.
- *Julian Simon's Bet with Paul Ehrlich*  
[http://www.overpopulation.com/faq/people/julian\\_simon.html](http://www.overpopulation.com/faq/people/julian_simon.html)  
This site has the bet that Julian Simon and Paul Ehrlich made in 1980 as well as the results of the wager and some of the post-bet dialog between Simon and Ehrlich.

## Different Perspectives in the Debate

- *Energetic Limits to Growth*  
<http://dieoff.org/page175.htm>  
This article by Jay Hanson, owner of dieoff.org, first appeared in "ENERGY Magazine" in the spring of 1999. It discusses limits to world population growth

from the viewpoint of energy production and consumption. His site also contains many other articles related to limits to growth.

- *Rethinking the Environmental Impacts of Population, Affluence and Technology*  
<http://dieoff.org/page111.htm>  
One of the models used to calculate an environmental impact is the IPAT model, which says that the (I)mpact = (P)opulation\*(A)ffluence\*(T)echnology. This paper describes the model and expands upon it.
- *Environmental Stewardship: Population and the Environment*  
<http://www.acton.org/ppolicy/environment/population/>  
In this 1997 article by Ben Wattenberg of the New York Times Magazine, called "The Population Explosion is Over", the author refutes the "alarmist" views of people such as Paul Ehrlich citing the United Nations Population Division's study that concluded that the population explosion has fizzled.
- *Overpopulation Frequently Asked Questions*  
[http://sunsite.anu.edu.au/community/hindutemple/articles/overpopulation\\_faq.html](http://sunsite.anu.edu.au/community/hindutemple/articles/overpopulation_faq.html)  
Author Brian Carnell presents an interesting list of answers to questions such as "What is overpopulation" and "How much food is there to eat?"
- *The Ingenuity Gap: Can Poor Countries Adapt to Resource Scarcity?*  
<http://www.library.utoronto.ca/pcs/ingen/ingen.htm>  
This is an interesting article by Thomas Homer-Dixon that looks at the ability of various societies and cultures to be able to "supply enough ideas" to adapt to the coming scarcity in resources for many of them.