

In Memoriam Julian Simon

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On February 8, just four days before what would have been his 66th birthday, the economist Julian Simon died. He was one of a kind. He believed that having more people on earth was good. People--their skills, spirits, and hopes--are the ultimate resource, Simon claimed. He came to these beliefs after years of research, and his writings are filled with the evidence that convinced him.

How could population growth not reduce resources? It is true that in the short run, population increases drive up demand for natural resources and thus their prices. But then the high prices prompt entrepreneurs and innovators to find new resources, or new ways of getting existing resources more cheaply. The net result: resources are more plentiful and cheaper than they were before the population grew. In *The Population Bomb*, Mr. Ehrlich generalized from animal behavior--he had studied butterflies--to human behavior. But Simon saw humans as fundamentally different from animals. He liked to quote the 19th-century American economist Henry George: "Both the jayhawk and the man eat chickens, but the more jayhawks, the fewer chickens, while the more men, the more chickens."

The evidence supporting Simon's view on resources is quite extensive. Take oil, for example. In 1931 Harold Hotelling, arguably the best resource economist at the time, predicted that the real price of oil and of other fixed resources would rise as the amount left on earth decreased. Given his premises, his conclusion had to be true. One of his key assumptions was that the inflation-adjusted cost of discovering and extracting resources would not fall. But it has, and that's why the known reserves of oil have increased even as we use more and more oil. In 1920 the director of the U.S. Geological Survey announced that annual production of crude oil had almost peaked. But by 1948 annual U.S. production was at four times its 1920 level.

Or consider iron. In 1950 the world's reserves of iron were estimated at 19 billion metric tons. Over the next 30 years, 11 billion tons of iron were smelted from

those reserves. That ought to have left 8 billion tons, right? Wrong: in 1980 iron reserves totaled 93 billion tons.

All this is consistent with what resource economists have been saying for decades. In *Scarcity and Growth*, a 1963 book financed by Resources for the Future, a Washington, D.C., think tank devoted to the study of natural resources, the economists Harold J. Barnett and Chandler Morse showed that between 1890 and 1957, costs per unit of mineral output declined "rapidly and persistently." This trend, they noted, fundamentally contradicted the Malthusian hypothesis of increased scarcity. Simon referred to *Scarcity and Growth* as "the great book which was my tutor." Simon made it his mission to popularize the findings of its authors so that people could see an alternative to the views of alarmists like Mr. Ehrlich.

The Wager of Tin

Famously, Simon dramatized his views with a wager. In 1980 he bet Mr. Ehrlich that natural resources would become cheaper rather than more expensive. After all, reasoned Simon, if natural resources were to become scarcer, their prices should rise. Mr. Ehrlich confidently took the bet. "The lure of easy money," he wrote in an academic journal, "can be irresistible."

Mr. Ehrlich, with John Harte and John P. Holdren, two colleagues from the University of California at Berkeley, chose five metals--copper, chrome, nickel, tin, and tungsten--to follow over a decade. Simon won. During those ten years, the prices of all five minerals fell: copper by 18 percent, chrome by 40 percent, nickel by 3 percent, tin by 72 percent, and tungsten by 57 percent. Mr. Ehrlich, whose word of honor was more reliable than his forecast of increasing scarcity, paid up. What's striking is that the bet didn't change Mr. Ehrlich's view that resources would become more scarce. Instead he made shaming remarks about Simon's mental capacity. A 1994 essay on Simon's ideas that he wrote with Anne Ehrlich, his wife, was titled "Simple Simon Environmental Analysis." The Ehrlichs wrote that "Simon is the absolute equivalent of the flat-earthers." In 1990 Mr. Ehrlich told the *New York Times* that explaining to economists like Simon "that commodities must become more expensive would be like trying to explain odd-day-even-day gas distribution to a cranberry."

Simon decided to expand both the bet and the set of potential bettors. In 1996 Simon told the Washington Post that he would bet "any prominent doomsayer" \$100,000 that by any material measure, living standards would only improve. "I'll bet on anything pertaining to material human welfare--life expectancy, price of a natural resource, number of telephones per person in China," he told the Post. No one ever took his offer. To me, this one fact, more than any other, is confirmation that Simon won the scientific debate.

Other evidence that Simon was right is all around us. The U.S. population is at an all-time high--and so is the inflation-adjusted gross domestic product per capita. World population is also at an all-time high--as is world output.

Or take the hundreds of millions of people that Mr. Ehrlich was sure were going to starve in the '70s. They didn't. In *The Ultimate Resource 2*, Simon pointed out that, from the early '60s to the early '80s in China--where, if population growth caused famine, you would certainly have expected famine--average daily caloric intake increased and the death rate fell. Again, as with his observations on natural resources, Simon was following other economists. Much of his thinking on food and famine was based on the work of the agricultural economists Theodore Schultz and D. Gale Johnson, both of the University of Chicago. Schultz wrote in 1951 that even as population increases, agricultural productivity improves so rapidly that less and less farmland is needed to feed that population.

Bet noire

You might think, with evidence like this, that virtually all economists would agree with Simon. Yet even so sensible an economist as Paul Krugman at the Massachusetts Institute of Technology wrote, in a 1996 article in the New York Times, that the price of minerals and oil will rise as expanding population pushes against finite resources.

To Mr. Krugman, I offer a version of the Simonian bet that I first made to him in the February 1997 Red Herring (see my article "Is There a New Digital Economy of Ideas?"). I will bet him \$10,000 that ten years from now, the prices of natural resources generally (he can pick any five) will be lower than they are today.

Simon was also a supporter of increased immigration: his 1989 book, *The Economic Consequences of Immigration into the United States*, is one of the definitive sources on the subject. Again Simon's contribution was not a new theory or new evidence, but a clearly written synthesis of hundreds of other studies. He showed that when immigrants come to the United States to work, there is a net gain for people already here. True, wages fall for the types of jobs that immigrants fill. But employers gain, as do laborers whose skills are complementary, rather than identical, to the new immigrants'. These gains, economists have shown, outweigh the losses to competing workers.

Crack Potshots

In "My Critics and I," the epilogue to *The Ultimate Resource 2*, Simon responded to criticism of the 1981 edition of the book. "There has been little serious criticism by economists," he wrote. Unfortunately, he didn't quote any of this "little." Simon did quote many of the noneconomists' criticisms of him, much of it heartrendingly abusive. Simon spent much of his life explaining that it's all right to have children. People responded not by embracing or refuting him, but by challenging his character or, like Mr. Ehrlich, his mental acuity. In the epilogue, Simon did not try to conceal his hurt: "I hope it induces you to imagine," he wrote, "what it would do to you to have so many people respond to your work in this fashion." He noted that others would "steer clear of me even when they believe that the work is sound and the conclusions correct--and even when they refer to themselves as my friends and say nice things in private," a situation that he found "painful as well as damaging."

Lastly, a personal note. I met Simon only once, at the Mont Pelerin Society meeting in Cannes in September 1994. We were arguing about something--he on the sidewalk, I in the street. Suddenly he pulled me by the arm out of the way of an oncoming car. For Julian Simon's rescue of the population unit I value most, I shall always feel grateful.