

BETS AND "ECOFANTASIES"

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There is now a "brownlash," at least in western nations, in the form of deceptive books and articles downplaying environmental problems and promoting a series of "ecofantasies." It is a well-orchestrated campaign, supported by conservative "think tanks" and a set of pseudoenvironmental organizations funded by polluting industries and self-serving developers calling themselves in the United States the "wise use movement." The goal clearly is to free some individuals and segments of society to deplete resources rapidly and diminish the waste-absorbing capacity of our environment for their immediate personal gains today, leaving the rest of us and our descendants to bear the risks.

One major figure in the brownlash is Julian Simon, a professor of business administration at the University of Maryland. He is best known for his belief that resources are infinite (he wrote in 1980 that the theoretical limit to the amount of copper that might be available to human beings was "the total weight of the universe"!) and that population can and should grow indefinitely.¹ He's still at it,² now citing a deeply flawed 1986 report prepared by economists for the U.S. National Academy of Sciences (NAS) that was subsequently protested by a large group of Academy scientists. Somehow he missed the 1993 statement from the population "summit" hosted by the Indian National Science Academy (New Delhi, October 24-27), endorsed by the Indian Academy, the U.S. National Academy of Sciences, Royal Society of London, and 55 other national academies of science worldwide that contradicted his position.³ He also ignored the 1993 "World Scientists' Warning to Humanity,"⁴ signed by some 1700 leading scientists, including over half of all living Nobel Laureates in science, which reads in part: "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.... A new ethic is required -- a new attitude towards discharging our responsibility for caring for ourselves and for the earth. We must recognize the earth's limited capacity to provide for us. We must recognize its fragility.... The scientists issuing this warning hope that our message will reach and affect people everywhere. We need the help of many."

Ignoring several scientific assessments about the state of our planet,⁵ and the views of some of Earth's best economists,⁶ Julian Simon has repeatedly claimed that all environmental trends are positive and that "doomsaying environmentalists" are wrong. It is rare for any careful scientist to use words like "every" and "all" in projecting the behavior of complex systems (like environment/society interactions). Yet in the San Francisco Chronicle of Friday, May 12, he stated "Every measure of material and environmental welfare in the United States and in the world has improved rather than deteriorated. All long-run trends point in exactly the opposite direction from the projections of

the doomsayers (our emphasis)." So confident is Simon in this sweeping assertion that he suggested a bet. He says everything will get better; he wants ecologists to bet that "any trend pertaining to material human welfare" will get worse. The doomsayer "picks the trend -- perhaps life expectancy, a price of a natural resource, some measure of air or water pollution, or the number of telephones per person -- and chooses the area of the world and the future year."

One of us (PRE) was goaded into making a bet with Simon on a matter of marginal environmental importance (prices of some metals). We therefore accepted Simon's challenge to bet on "trends" of much greater significance. We have offered to bet him \$1000 per trend that each of the following 15 continental and global indicators "pertaining to material human welfare" and including "some measure(s) of air and water pollution" will change in the direction indicated ("get worse") over the next decade:

1. The three years 2002-2004 will on average be warmer than 1992-1994 (rapid climatic change associated with global warming could pose a major threat of increasing droughts and floods).

2. There will be more carbon dioxide in the atmosphere in 2004 than in 1994 (carbon dioxide is the most important gas driving global warming).

3. There will be more nitrous oxide in the atmosphere in 2004 than in 1994 (nitrous oxide is another greenhouse gas that is increasing due to human disruption of the nitrogen cycle).

4. The concentration of tropospheric ozone will be greater in 2004 than in 1994 (tropospheric ozone has important deleterious effects on human health and crop production).

5. Emissions of sulphur dioxide in Asia will be significantly greater in 2004 than in 1994. In the atmosphere, sulphur dioxide becomes sulfuric acid, the principal component of acid rain, and is associated with direct damage to human health.

6. There will be less fertile cropland per person in 2004 than in 1994. As the population grows, some of Earth's best farmland is being paved over).

7. There will be less agricultural soil per person in 2004 than in 1994. About a quarter of the world's top soil has been lost since World War II, and erosion virtually everywhere far exceeds rates of soil replacement.

8. There will be on average less rice and wheat grown per person in 2002-2004 than in 1992-1994. Rice and wheat are the two most important crops consumed by people.

9. In developing nations, there will be less firewood available per person in 2004 than in 1994. More than a billion people today depend on fuelwood to meet their energy needs.

10. The remaining area of virgin tropical moist forests will be significantly smaller in 2004 than in 1994. Those forests are the repositories of some of humanity's most precious living resources, including the basis for many modern pharmaceuticals worldwide.

11. The oceanic fisheries harvest per person will continue its downward trend and thus in 2004 will be smaller than in 1994. Overfishing, ocean pollution, and coastal wetlands destruction will continue to take their toll.

12. There will be fewer plant and animal species still extant in 2004 than in 1994. Continuing habitat destruction is wiping out organisms that are the working parts of humanity's life-support systems).

13. More people will die of AIDS in 2004 than did in 1994 (as the disease takes off in Asia).

14. Between 1994 and 2004, sperm counts of human males will continue to decline and reproductive disorders to increase. Over the last 50 years, there has been a roughly 40 percent decline in the sperm counts worldwide. We bet this trend will continue because of the widespread use and environmental persistence of hormone-disrupting synthetic organic chemical compounds.

15. The gap in wealth between the richest 10 percent of humanity and the poorest will be greater in 2004 than in 1994.

We, of course, are not arguing that there are only unfavorable environmental trends, rather that many of the most important are very unfavorable and thus demand prompt attention. It is sensible to focus on things that need fixing, rather than those that don't. Virtually all long-term trends have short-term fluctuations, so we are challenging Simon on 15 trends to reduce the chances that a statistical fluke will decide this bet. To determine the direction of the trends, we will accept the decision of a panel of scientists chosen by the President of the National Academy of Sciences in 2005. Referees will be necessary, since terms like "significantly" (e.g., no. 10 above) and estimates of such things as agricultural soils involve questions of judgment. But there is an empirical basis on which competent scientists can make reasonable judgments.

The bet is binding on our heirs, and our winnings will go to non-profit organizations dedicated to preserving environmental quality and human well-being. Simon, so far, has refused to accept the wager despite the rhetoric quoted above in his Chronicle editorial. Simon claimed to a number of journalists that our

bet was not about material human welfare. He used this as an excuse not to stick to his own challenge. He now tells reporters that he wants to bet that only the net effects of human activities will be positive (e.g., an increase in life expectancy), and accuses us of being unreasonable for not accepting this new kind of bet.

We refuse to let him out of his original challenge for several basic reasons. First life expectancy is a complicated result of many factors, including infant nutrition, availability of medical services, and environmental quality. Also it may temporarily (i.e., between now and 2005) increase, but that increase may not be sustainable. Our point is not to accept all of current human activities as a take-it-or-leave-it bundle. Simon wants to bet on all of what people do, good and bad, and nothing else. We deliberately focus on negative environmental or social trends because they are the ones that need to be fixed regardless of whether other trends are positive. Policies and practices are not established as a fixed, take-it-or-leave-it-bundle. We do not accept Simon's revised "after the Chronicle" bet because we believe a measure like life expectancy would be more improved (and certainly more in the long-term) if negative trends like our 15 measures could be turned around by wise policy actions.

A second reason for our refusal to let Simon off the hook on his original Chronicle proposition is that he, not we, declared "all" trends to be positive. The reason we indulged in this betting foolishness in the first place was either to (1) get Simon to retract his socially dangerous and scientifically ridiculous assertion that all material or environmental welfare trends were positive, (2) get Simon to contribute \$10-15,000 to the responsible environmental charities we select in 2005 to receive our winnings, or (3) get the public to see that Simon blusters and asserts, but won't back up his own rhetoric when seriously challenged. So far it appears that the least favorable outcome (3) is most likely.

Bets, of course, are a poor way to settle issues about the human future, but we have been forced into making one in an attempt to counter the misinformation spread by Simon and others and taken quite seriously by the media and public, at least in western countries. Scientists in all nations must be alert to those who would distort what is happening to our planet in order to boost the positions of those who already are degrading it through promoting unrestrained population growth and reckless consumption. Tragically, rational scholarly discourse no longer holds sway in the public arena -- as one journalist put it, environmental scientists "are in a street fight."

Since humanity is gambling with the life-support systems of society, we have made 15 wagers we would love to lose. In fact, we will continue to be doing everything in our power to make that

happen. Sadly, the complacency and misinformation Simon is spreading increase the chances we will win the bet -- while humanity loses. We hope the wager will cause him and others to reconsider the risks they so blithely recommend the public undertake by promoting the ecofantasy of benign indefinite growth.

NOTES

(1) For an economist's fine critique of Simon's nonsensical views of how the biophysical world works, see Herman Daly's review of Simon's book The Ultimate Resource in The Bulletin of the Atomic Scientists, January, 1982.

(2) J. Simon, "Earth's Doomsayers are Wrong," San Francisco Chronicle, May 12, 1995.

(3) Population Summit of World's Scientific Academies, National Academy Press, Washington, D.C., USA.

(4) Sponsored by the Union of Concerned Scientists, 26 Church Street, Cambridge, MA 02238.

(5) E.g., the IPCC (Intergovernmental Panel on Climate Change), which does assessments requiring the balanced judgments of hundreds of scientists from dozens of countries. It predicts neither certain doom nor utopia, but rather warns that some environmental and material human welfare trends are ominous and require attention if the odds of potential catastrophic are to be minimized.

(6) e.g., Kenneth Arrow, et al., 1995. Economic growth, carrying capacity, and the environment. Science 268:520-521, 28 April; C. Folke, 1995. Ecologists and economists can find common ground. BioScience 45:283-284.

(7) P. Ehrlich and S. Schneider, Wagering on global environment, San Francisco Chronicle, 18 May 1995.