

Scientific American and the Silent Lie

Contributed by Albert Bartlett
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Editor's note: As long as the forces of industrial expansion are able to spew pro-growth propaganda that denies the laws of physics and the reality of overpopulation, the sustainability movement is at a disadvantage in reaching the public. Professor Bartlett has long been a tireless communicator for common sense in the area of energy and environment. - JL

The September 2006 issue of Scientific American(SA) is a "Special Issue" devoted to "Energy's Future Beyond Carbon" with the subtitle "How to Power the Economy and Still Fight Global Warming." As I read the issue I thought of Captain Renault, the Chief of Police in the movie "Casablanca" who says to an assistant, "Major Strasser has been shot. Round up the usual suspects." The implication of the Chief's order is clear. Never mind finding the culprit, just "round up the usual suspects."

The main body of this special issue consists of nine articles relating to global warming, each dealing with one or more of the usual suspects. These are summarized in the first article, "A Climate Repair Manual." There we read that global warming is a major problem: "Preventing the transformation of the earth's atmosphere from greenhouse to unconstrained hothouse represents arguably the most imposing scientific and technical challenge that humanity has ever faced. Climate change compels a massive restructuring of the world's energy economy. The slim hope for keeping atmospheric carbon below 500 ppm hinges on aggressive programs of energy efficiency instituted by national governments." The culprit is world population growth, but SA is just rounding up the usual suspects.

Some fraction of the observed global warming most certainly is caused by the release of greenhouse gases from the burning of fossil fuels. As the size of the world population increases, the rate of burning of fossil fuels increases and this can be expected to increase the rate of rise of global average temperatures. The authors of these nine articles have to know that the size of the global population is a major factor in determining the rate of release of greenhouse gases. Yet in a special issue devoted to reducing global warming, SA almost completely ignores population size and growth and instead "rounds up the usual suspects" -- things we can do to reduce the human contributions to global warming such as the increased use of nuclear power and improving efficiency.

The special issue contains no serious evaluation of the problems of peak production of global oil, which could happen any year now.(1, 2) There is even a hint of denial: "Even if oil production peaks soon -- a debatable contention given Canada's oil sands" (emphasis added).

When one looks at the facts, one can see that production of gasoline from the oil sands won't have much effect on the peaking of world oil production. There is no serious discussion of the net energy in the production from oil sands, or in the production of ethanol from corn. It is just noted that we will have to be more efficient in these endeavors.

Growth remains sacred. "But holding CO2 emissions in 2056 to their present rate, without choking off economic growth, is a desirable outcome within our grasp." To meet the growing global demand for energy, "thousands of new power plants must be built." "If the fleet of nuclear power plants were to expand by a factor of five by 2056, displacing conventional coal plants," what will we do after 2056? None of the authors expresses any recognition of Eric Sevareid's law, "The chief cause of problems is solutions."(3) Example: Nuclear power is a solution to the problem of CO2 emissions from coal burning, but nuclear power comes with its own new problems. There is a lonely isolated touch of reality in the opening sentence of the article on renewable energy: "No plan to substantially reduce greenhouse gas emissions can succeed through increases in energy efficiency alone." The reason behind this reality is that continuing population growth, even at the level of approximately 1% per year, will likely overwhelm the annual savings that can be achieved nationally or globally through improved efficiencies.

The article on hydrogen notes, "it could be decades before it [hydrogen] starts to reduce greenhouse gas emissions and oil use on a global scale." We don't have decades.

There is blithe talk about the billions and trillions of dollars that it will cost to rebuild our energy infrastructure to enable the deployment of several of the "usual suspects." There is no serious evaluation of the impact of such costs on people and on economies. For instance, it costs about \$1.50 a watt to purchase a new coal-fired electric generating plant and since utilities budget something like 1000 watts of generating capacity per person, every new person added to the service area of a utility costs the rate payers about \$1500. So every time the population of a utility's service area grows by one per-cent, every person in the service area has to pay approximately one percent of \$1,500, or \$15, just to purchase new hardware for the generation of electricity to meet the needs of new people added to the service area.

The last article, "Plan B for Energy," is prefaced with a futuristic drawing with the caption "Late 21st Century energy sources might include nuclear fusion reactors, hydrogen generated from ponds of genetically engineered microbes, high

altitude wind farms [this is a new suspect], orbiting solar arrays, and wind and tidal generators, all linked to a worldwide superconducting grid." The large electric distribution grids that span continents are enormously complex and they have the unpleasant habit of failing in massive and spectacular ways. Even more frightening is the fact that these enormous networks will be managed by people, and people will fail. I hope the future does not work out as it is portrayed in Scientific American and I don't think it will. A society that is totally dependent on high tech for the functioning of every aspect of the lives of its people is vulnerable to disruption by acts of God and acts of people. The complexities of our present infrastructure predictably lead to unpredictable failures. More complex infrastructures anticipated for the future will probably experience larger unpredictable failures.

In a short essay before the main energy articles ("Lower Fertility: A Wise Investment" by Jeffrey Sachs,(4)), there is a brief mention of population. This does address population growth but in a way I found contradictory and objectionable. "Rapid population growth is not the main driver today of these [environmental] threats." Attention should be given to "high and rising rates of resource use per person rather than to the rise in the sheer number of people." The world's rate of consumption of fossil fuels is the product of the population size and the average per capita annual consumption. Both have to be reduced. A few sentences later Sachs writes, "Yet the continued rapid population growth in many poor countries will markedly exacerbate the environmental stresses." So population growth is not a problem and then is a problem. But shifting the blame to the people of poor countries is the "them, not us" response that is so often encountered when population problems are discussed.(5) Sachs then presents the arguments for working to lower the fertility rates of people in "poor countries," pointing out our funding programs to help with this would be "among the smartest investments that the rich countries could make for their own future well-being." The idea is good. The reason given is selfish and destructive. He seems to be saying that if we reduce "their" numbers, it will be a good investment for us because there will be more resources and better lives for us. If we want to help poor people, we will be helping them increase their per capita rate of resource consumption, which, for the foreseeable future, will increase the rate of global production of greenhouse gases. Only by reducing the size of the world population can we hope to be able to give significant help to poor people. Only by reducing the sizes of populations can we have a reduction in the overall global rate of consumption of fossil fuels and the consequent reduction in the rate of production of greenhouse gases. We must lead by example by addressing overpopulation in the United States.

Scientific American has rounded up the usual suspects but has ignored the perpetrator of the crime. The editors and writers at Scientific American know that population growth is the underlying source of the problems, but it is politically incorrect to state this obvious fact. Mark Twain wrote that if one has information that would help others, but does not share that information, then one is telling a "Silent Lie."(6) Because it does not address population size and growth as the main underlying cause of global warming, this issue of Scientific American is a serious "silent lie."(7)

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References

1. Kenneth S. Defeyes, Hubbert's Peak (Princeton University Press, 2001).
2. A.A. Bartlett, "An analysis of U.S. and world oil production patterns using Hubbert-style curves," Math. Geology 32, 1-17 (Jan. 2000).
3. E. Sevareid, "CBS News" (Dec. 29, 1970), quoted in T.L. Martin, Malice in Blunderland (McGraw-Hill Book Co., New York, 1973).
4. Jeffrey Sachs, Director of the Earth Institute at Columbia University and of the U.N. Millennium Project.
5. A.A. Bartlett, "Malthus marginal-ized," The Social Contract 8 (3), 239-251 (Spring 1998).
6. Mark Twain, The Man That Corrupted Hadleyburg and other Short Works (Prometheus Books, Amherst, NY, 2002), p. 159.
7. A.A. Bartlett, "Thoughts on long-term energy supplies: Scientists and the silent lie," Phys. Today 57, 53-55 (July 2004).

See letters and responses, Phys. Today 54, 12-18 (Nov. 2004) and 58, 12-17 (April 2005).