

mortality, prices of copper and world food production all cheerfully go in the right direction. We are told parenthetically that Africa's food production is lower than it was several years ago, but that "few believe that Africa's suffering has anything to do with a shortage [of resources]". Wars are the cause of suffering but they are not caused by shortages of resources such as oil in the Persian Gulf or land in central Africa. And the environment is becoming cleaner: ambient concentrations of lead, and of DDT (dichlorodiphenyltrichloroethane) and PCBs (polychlorinated biphenyls) in the Great Lakes, are decreasing. Neither Simon nor Myers mentions that these examples are the consequences of bitterly fought campaigns by physicians and environmentalists.

Next, Simon tackles "the statistical flummery about species loss", the "soil erosion scam" and "atmospheric issues". Those who study evolution will find echoes of the attacks on their discipline from religious fundamentalists, in which academic debate about timing and precise mechanisms is interpreted as a large-scale cover-up of evolution's falsity. Similarly, Simon argues that the uncertainties of predicting, say, the degree of global warming is an indication not of the complexity of the problem, but that the problem will simply go away. Certainly, within the careers of key players, concern has gone from global cooling (from increased atmospheric particulates) to global warming, with the eruption of Mount Pinatubo added for confusion. Pleas for future research arise not because the problem is difficult or important but because it generates jobs for scientists, argues Simon. The ozone hole is no problem either — just wear a hat. Indeed, increased ultraviolet radiation may "have beneficial effects" by reducing the incidence of rickets.

Myers's opening statement is devoid of any tables or figures (Simon's contains 24). Simon looks to the past and expects the trends to continue. Myers looks to the best guesses of what the future will bring. Although Simon disputes, distrusts and disparages the claims of scientists, Myers respects them. He starts by quoting the joint statement issued in May 1992 by the US National Academy of Sciences and the Royal Society of London: "If current predictions of population growth prove accurate. . . the future of our planet is in the balance". Species are becoming extinct in unusual numbers — the experts tell us. The consensus among atmospheric scientists is yes, the climate will warm. Several degrees average difference in annual temperature is not a matter of "spring coming a day or two earlier than usual" but more like the difference between now and when the ice sheet covered half of Britain. As for ozone, Myers might have noticed that

Australian television commercials don't worry about rickets; they urge people to "slip [on a shirt], slap [on a hat] and slop [on the sun cream]".

Questions from the audience follow. Two participants from California and New Jersey feel that life in those places is not incontrovertibly better now than in the past. Los Angeles smog has not obviously decreased. California might be a better place with more people. In the recent election, however, voters in California overwhelmingly supported withdrawing social benefits from those who have crossed the border without visas.

In post-debate statements, Simon criticizes Myers's views on the inevitably irreversible extinction of species. I cannot find anything in Simon's discussion that raises it above incompetence. He argues that if we count perhaps one bird extinction a year then this number is how many species we are losing in total — hardly enough to be of concern. Of course, the world's 10,000 species of birds are less than one in a hundred of the named organisms (and may be as few as one in a thousand of all species named and unnamed). Birds are a typical sample on which to base global extinction rates; one simply multiplies the bird extinctions by the fraction of the planet's species they represent. Even from this sketchy analysis, one quickly gets the extinction esti-

mates of roughly one to several species per day favoured by Myers and his fellow members of the US National Academy (P. Raven, E. O. Wilson, P. Ehrlich, R. May and others). It is hardly difficult to obtain the right order of magnitude, or to see how many orders of magnitude greater it is than extinction rates in the fossil record.

In the post-debate, Myers wins the figures-and-tables battle 14:6. But his best point involves population. Given access to birth control and education, women dramatically reduce the number of children they bear, often to levels of zero growth. Is this a worldwide phenomenon because such education misinforms them?

Two clear questions emerge. If scientists do not find Simon's analyses compelling, nor his dismissal of scientific consensus appealing, then what does this say about their efforts to communicate complex ideas to the public? What do we deduce from the failure of ecology and economics, disciplines with names sharing a common root, to speak mutually comprehensible languages? Science's failure to communicate complex topics is not a new problem, but this book illustrates it as well as any other. □

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"ALBERT" by Brad Johannsen, a caricature of Albert Einstein lecturing at the Institute for Advanced Study in Princeton, New Jersey. From *Koala: Australia's Ancient Ones* by Ken Phillips, a popular and colourfully illustrated account of the natural history of this eucalyptus-loving marsupial and its role in mythology. Macmillan Publishing USA, \$27.50.

