recorded a distribution in 1994 that included the Cook Islands, Fiji, the Solomon Islands, and Papua New Guinea. Since then, we have received documentation (*1*) that CLOD also is common in the Samoa Islands. As Hale and Mitchell note, all of these except Papua New Guinea are exposed to predominantly southwest current patterns (*2*), whereas the island systems tend to be oriented with respect to one another in a southeast to northwest direction.

The observation of abundant CLOD in the Cook Islands and Fiji in 1994, but not recorded at the identical study sites during 1993 in Fiji, suggested to us a westward dispersal from an unspecified eastern Pacific source correlated with the predominant westward South Equatorial Current pattern. The sink rates we found for the larger CLOD particles showed values that appeared to be too rapid (0.8 to 1.6 centimeters per second) to support dispersal by current movement alone. The concept of dispersal by sea-surface microlayer transport (*3*, *4*) under the influence of predominant northwest winds acting at right angles to the south-tending current patterns opens the possibility of a CLOD source farther to the south and may explain how CLOD progressed northward and westward of the Cook Islands.

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Earth's Carrying Capacity

Congratulations to Joel E. Cohen on his clear and well-reasoned article "Population growth and Earth's human carrying capacity" (Articles, 21 July, p. 341). However, arguments over the carrying capacity of the Earth are ultimately sterile. None of us can say what technological developments may or may not come to pass in the years ahead, or when, but the *potential* of population to double every 20 years remains constant. If we follow the advice of Malthus, and every person is careful to limit the number of their children to what is appropriate for the circumstances—having few children when times are bad and perhaps more when times are good—then however large the population grows it should not be too much. If people do not heed this advice, if they trust in Adam Smith or some unborn scientist to supply the means to support families that they do not know how to provide for today, then sometimes they will win the gamble, but more frequently not, and never in the long run.

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Cohen accurately quotes the United Nations Development Programme's *Human Development Report 1992* as stating that "in constant 1989 U.S. dollars, the absolute gap between the top fifth and the bottom fifth [of the world's population, in income] rose from $1864 in 1960 to $15,149 in 1989." However, this statement, which implies an eightfold increase in the economic "gap" in constant dollars, is simply wrong. The figures given must be in dollars of the day, and thus vastly overstate the increase in the "gap."

The standard inflation indicator for U.S. dollars increased more than fourfold between 1960 and 1989 (gross domestic product price deflator of 108.5 in 1989 versus 26 in 1960) (*1*). Thus, if the "gap" in 1960 was $1864 in 1989 dollars, it would have been

less than $450 in the then current 1960 dollars [$1864/(108.5/26)]. However, all of the data for 1960 show per capita incomes at the time of around $75 for the poorest countries and around $1500 for the richest (*2*).

If the stated gap is in dollars of the day, then the earlier "gap" represents about $7800 in constant 1989 dollars [1864* (108.5/26)]. In this case, the "gap" would have doubled over the 30-year period rather than growing eightfold.

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AZT Trial in Thailand

Jon Cohen, in his News & Comment article "Bringing AZT to poor countries" (4 Aug., p. 624), effectively summarizes a dilemma caused by the success of AIDS clinical group protocol 076 (ACTG 076) in preventing mother-to-child transmission (*1*). This dilemma, recognized soon after the results of 076 were released, is characterized by several ethical and distributive justice issues (*2*).

Cohen indicates that our proposal for a study of a shortened course of the drug AZT has been criticized by some because we use a full standard ACTG 076 control arm for comparison to a "short AZT course," rather than a placebo control arm. We firmly believe that it would be unethical to incorporate a placebo arm in our study in Thailand.

The Thai government has already provided AZT to AIDS patients on a limited basis and recently stated its intent to continue to distribute AZT to HIV-infected pregnant women as needed to reduce the chance that they transmit the virus to their infants (*3*). This may not be the case for other developing countries mentioned by Cohen. Also, the practice of avoiding breast feeding on the part of HIV-infected mothers is feasible in Thailand because milk substitutes and sterile equipment are readily available, but they are probably not feasible in the other countries cited.

When a treatment has been demonstrated to be effective, especially when the outcome for subjects is death, it is standard practice to use the effective treatment (if this is practical) and not a placebo as the reference in subsequent clinical trials, such as those designed to examine new dosing alternatives and to assess newly proposed therapies. While there is great uncertainty as to how AZT works and which treatment component is most important, all of the co-investigators agree that providing no treatment at all to HIV-infected pregnant women would subject their infants to a considerable risk.

Adding a placebo arm to our study design could provide added reassurance that the 076 regimen is as effective in the Thai population as in the original study and a more definitive estimate of the degree of efficacy of the shortened regimen over no treatment. However, we believe that this scientific justification does not outweigh the ethical imperative to provide all subjects with a treatment that is consistent with current scientific knowledge about the efficacy of AZT in preventing transmission and with the emerging standard of care in the country in which the study is undertaken. Both the Harvard University School of Public Health and the Ministry of Public Health of Thailand