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A non-malthusian demographer speaks about the 'population crisis'

Dr. Samuel Preston is head of the Population Studies Center at the University of Pennsylvania. He has written extensively on issues relating to population, and will speak at the United Nations International Conference on Population and Development, planned for Sept. 5-13 in Cairo, Egypt, and at a simultaneous conference sponsored by U.N. non-governmental organizations (NGOs). Dr. Preston testified before the House Committee on Foreign Affairs, which held hearings in late July on the question of America's role at the Cairo conference, which is under heated debate, because of the conference's openly malthusian agenda.

While most of the demography profession today is enmired in malthusianism, Dr. Preston has been fighting against the false concept that the world is overpopulated, both in his writings and testimony. He cites the way in which the availability of population research funds determines the type of research that is done. He lends support to a policy of economic development and technological innovation, to address the causes of poverty, disease, famine, and environmental degradation, which the malthusians blame on overpopulation.

We publish here excerpts from his planned Cairo speech, "Population and the Environment," and from a 1986 paper presented in the Distinguished Lecture Series in Behavioral Science, Institute for Behavioral Science, University of California, titled "The Social Sciences and the Population Problem," with the author's permission.

From "Social Sciences and Population," 1986:

First, we must define more precisely what we mean by a population problem. Rapidly growing populations are, after all, principally a signal of biological success and are not intrinsically problematic. . . .

A close identification of a field of research with a "problem" poses certain obvious hazards to the development of that field. One hazard is that much research support is predicated on the continued perception that a problem exists. This condition is not always conducive to research with the highest standards of objectivity. USAID's research budget in population for the most part avoids any threat to the programs it sponsors by focusing on the accumulation of data and on the development of "persuasional devices"—mainly, simplistic computerized models of demographic-social relations—that are used to induce governments in poor countries to introduce population control measures. . . .

More important than funding prospects is the fact that many population researchers have invested their efforts and sometimes their professional lives in the solution of the population problem, and the investment is threatened by any redefinition that would minimize its importance. . . .

While voluntary family-planning programs enjoy wide support, there is no such acceptance of other types of policies, such as China's one-child family program. . . . In general, discussions of the Chinese example among social scientists have been surprisingly muted; it is, after all, the most dramatic, wide-ranging, and successful anti-natalist policy in human history. Perhaps the reason for quietude is an anxiety about shattering the clear consensus among population researchers and policymakers over voluntary family-planning programs.

Population growth as an economic problem

. . . Most reasoning about the hazards of population growth uses an implicit or explicit model in which the ratio of population size to other quantifiable factors of production (especially land and capital) is a key determinant of well-being. Intuition almost invariably suggests that these other elements are fixed or will not respond in a one-to-one fashion to population growth. But recent research casts doubt on the importance of quantifiable factors of production in the process of economic growth. Indeed, quantified models of economic growth have proven useful mainly in demonstrating their own shortcomings. Economists have attempted to represent the relation between output, on the one hand, and quantities of capital and labor inputs, on the other, in the form of simplified production functions. But when these functions were invoked to explain the process of economic growth, it has been found that, in most times and places, the majority of growth could not be accounted for by their indexes of inputs. Instead, growth resulted principally from improvements in technology—the way in which inputs are combined. The technology factor also accounts for most of the international differences in average income levels; three-fourths of the advantage of the United States in output per worker relative to northwest Europe or Japan in 1960 was attributable to superior technology of production; less than a quarter was attributed to more capital per worker.

Japan, the most dramatic of the postwar economic successes, is a telling case. Two government commissions after World War II concluded that Japan, already very densely

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A poster promoting China's one-child per family policy. China has "the most dramatic, wide-ranging, and successful anti-natalist policy in human history"—and the population researchers are keeping very quiet about it, lest it upset their malthusian consensus.

populated and deficient in natural resources, was actually overpopulated. But the population of Japan grew an additional 40% between 1950 and 1980, while its per capita national income was growing by an astounding 640%. A careful study of Japan's economic growth by Denison and Chung (1976) showed that improved technology was the key to its success. Much of the technology at the early stages was imported, but possibilities for importing technology were available to other countries as well, so why was Japan so exceptional? When I was taking a course in economic development from W. Arthur Lewis 20 years ago, he ascribed it to "national energy." This was, of course, an unacceptable answer to economics graduate students, who wanted to deal only with quantifiable inputs and demonstrable equations. But I am not sure that we could do any better today, if by "national energy" we mean the culture and institutions that have supported economic growth and that defy simple quantification.

What role does population size and density play in the development of technology? . . . Europe, the first region to enter the phase of modern economic growth, was the most densely populated region of its time.

On the other hand, the United States, one of the world's richest countries, is relatively sparsely populated. It may not seem sparsely populated because most of our population has chosen to live in dense metropolises. But that tendency carries a lesson of its own: We congregate in urban areas because incomes are higher there, and incomes are higher because productivity is higher. Manufacturing and service activities are simply conducted more efficiently in large aggregations because they offer larger markets for goods, labor, and credit. They also offer, as a rule, better infrastructure because costs can be spread over more users. Urban areas have also disproportionately contributed to the development of technology, at least as measured by patents.

The economic growth story is essentially repeated when we examine the source of another great achievement of the 20th century, the decline in mortality and increase in longevity.

From "Population and the Environment," a lecture prepared for the International Union for the Scientific Study of Population for presentation at the NGO Conference at the International Conference on Population and Development of the United Nations, Cairo, Sept. 5-13, 1994.

This paper provides a brief review of what is known about the effect of population growth on environmental quality in various settings, and concludes with some comments about population policy.

1. Land Transformations and Food Production

As a simple collection of mass, the human population has no environmental implications. If they stood together, today's 5.6 billion humans would occupy a circle with a radius of less than eight miles that extended an infinitesimal distance into the atmosphere. It is human activity that has changed the face of the globe, and the relation between human activity and human numbers is not always straightforward. . . .

Farming is by far the most important human activity that has transformed the land, and continues to be the principal route by which humans affect the environment. Eleven percent of the earth's land surface is now cultivated, although less than 1% is in permanent crop (Waggoner 1994). Another 26% is pasture, and 31% is forest. The amount of land that

could, under certain circumstances, be used to grow crops is roughly three times the amount that is currently used for this purpose (Bongaarts 1993).

A. Deforestation

The food needs of a growing population can be met either through intensification of production on land that is already cultivated or through expansion of cultivation into new territories (extensification). . . . In view of the amount of attention that has been directed to deforestation, it may be surprising to learn that the world's forested area has declined by only 20% since the dawn of agriculture 10,000 years ago (Miller et al. 1991). Just how rapidly the remaining forests are disappearing is a matter of some dispute. Recent reports using high-resolution satellite photography suggest that previous estimates of deforestation in the Amazon were approximately 50% too high. . . .

B. Intensification of Production

. . . In certain settings, the economic attractiveness of intensifying production dominates that of extensification. For example, total food production has increased in Europe between 1966 and 1983 while cropland fell by a quarter and the total forested area grew by 30%. The United States Department of Agriculture projects a 30% shrinkage of cropland in the United States between 1982 and 2020 (Waggoner 1994). Waggoner (1994) describes feasible strategies by which the projected 20 billion people in the middle of the 21st century can be fed while total cropland is reduced. He notes that the world's farmers are already producing enough calories and protein to sustain 10 billion people on a vegetarian diet. However, it seems unlikely that those who can afford to eat meat will forgo the opportunity to do so; instead, they will likely be joined by hundreds of millions more who will be able to act on a preference for meat in their diets. The additional food needs of a much larger human population are certain to be met primarily by increased production rather than by redistribution among food types. . . .

The prospects for agriculture in developing regions are not unremittingly grim. There is no question that agricultural research is capable of solving many current production problems and that existing techniques for increasing yields on a sustainable basis are not fully exploited. Even in Africa, there are many examples of successful innovation and adaptation in the face of rising population pressure, for example, the introduction of maize in northern Nigeria (Spencer and Polson 1991). Many successful institutional adaptations can also be cited. For example, government authorities constructed a dam in Northwest India in return for villagers' agreement to forgo grazing on hillsides held in common, which reduced the rate of soil erosion by a factor of 25 (Chopra and Rao 1991). The fact that the real price of food has been declining through most of the 20th century is the best indication that agricultural systems have been able to keep up with both population growth and rising demand for food induced by affluence (Bongaarts 1993).

Currency Rates