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The Overpopulation Concept and the Latin Americanist Geographer

The use of the term overpopulation with respect to Latin America is becoming increasingly common. Some regions, especially Central American and insular Caribbean countries, are considered by many to be overpopulated at present. Implied (though not always clearly stated) in such an assumption is the notion that the population/resource balance would be more favorable if the population density were lower and all other socioeconomic variables were allowed to readjust to that lower density. It is, however, the rapid rate of population growth rather than the present density which is considered most critical by those concerned with overpopulation in Latin America, The view that rapid population growth will give rise to overpopulation assumes a Malthusian relationship between population growth and resource availability; it assumes that population growth will not be offset by increased, or more efficient exploitation of resources.

The whole question of overpopulation is replete with fallacies and unproved assumptions (Zelinsky, 1966). Before we, as social scientists, can assume that rapid population growth will have a detrimental effect on Latin America we must analyze more closely the functional relationships between population growth and resource availability. As always, the critical factor in resource availability is likely to be social and technological change rather than the quantity or quality of presently known reserves of resources. It is essential then that we not overlook the potentially positive relationship between population pressure and social or technological change.

Overpopulation can be defined as an imbalance between the available resources under existing social and technological constraints, and the resources needed to provide some minimal or optimal life style to the population in question. The resource which is in short supply may lead to low levels of consumption, or may relate to an accelerated destruction of the population's production potential. There are at least three conditions which are widely accepted as symptomatic of overpopulation: low per-capita incomes (poverty); rapid use or spoilage of non-

renewable resources, especially environmental pollution; and small amounts of per-capita living space. The following sections of this paper will attempt to review these three conditions especially as they relate to Latin America, and point out some areas where geographic research is needed.

Per-capita living space

It is probably not possible to gain any meaningful insight into the question of median per-capita living space in a given region using the type of published data currently available. Mean arithmetical density figures are all but irrelevant as measures of human crowding and congestion. The analysis of population densities in uniformed areal data units provides a meaningful figure in this regard (Nunley, 1967), but still falls short of the goal of providing unbiased information on median per-capita living supporting capacities, while much greater havoc has been wrought in extensive pastoral zones with few inhabitants."

The effect of population growth on the aesthetic quality of a region is difficult to assess in objective terms. The arbitrary distinction between the works of man as "cultural" and the product of other life forms as "natural" is carried to its absurd conclusion by those who see any manmade change in the environment as destructive, aesthetically unappealing, or somehow having an "unnatural" consequence for the environment. The argument can be made that the addition of the human animal to a region adds rather than detracts from its natural beauty. The concentration of the human population suggests that the vast majority have opted for man-made beauty over that produced in man's absence.

No one can be unconcerned about the present state of environmental decay especially as manifested in the rich countries and in the more highly developed regions within poor countries. However, there is little basis for assuming that lower rates of population growth, including zero population growth, would provide even a temporary solution to the problem. It is not inconceivable that zero population growth would extend the age in much of Latin America where "economically rational men" squander resources which otherwise might be conserved. The crumbling agricultural terraces, decaying irrigation systems, and abandoned ridged fields of South America bear witness to the effects of population decline, a condition solidified by present land tenure patterns.

Such density variables tell us nothing about the amount of space which is free of restriction and accessible to the individual. Moreover, any measure of optimal

living space must take into consideration several other factors. First of all, how much space does an individual want or need? Does the space requirement vary with the person's culture, occupation, or mobility? To what extent does unoccupied space represent a dis-economy to the individual, raising the cost of items he attempts to obtain through trade and making it more difficult for him to specialize his activities? Edward Hall (1959; 1966) has attempted to deal with some of these problems in his books *The Silent Language* and *The Hidden Dimension*.

Using traditional measures of absolute population density, it is clear that densities are incomparably higher in urban areas than in rural areas. It follows then that the median amount of living space for the inhabitants of the largely urban country of Australia is likely to be far less than for the inhabitants of the largely rural country of India; surely we cannot assume that the empty out-back of Australia is part of the living space of people living in Sydney! Does it follow that Australia is more overpopulated than is India?

Is there a functional relationship between population densities, or rates of population growth, and per-capita amounts of living space? Within the foreseeable future the answer seems to be no. Urban crowding seems to be as acute in the sparsely populated countries of South America as in the densely populated countries of Middle America. Moreover, urban population densities in the developed countries of the world have tended to decrease rather than increase with city growth (Berry, 1963; Gibbs, 1963). Is it not also possible that population densities in Latin American cities will decrease as individual mobility increases, regardless of the rates of population or city growth? A growing population will obviously lead to a higher mean population density but space needs are individual, not statistical averages. We lack evidence to support the assumption that population growth decreases the amount of living space enjoyed by the population in a real world situation where all other factors quite obviously do not remain the same.

Resource depletion and environmental pollution

Many scholars consider the accelerated rate of resource depiction and spoilage as perhaps the most detrimental aspect of overpopulation (see Detwyler, 1971; Bolin, 1970). It seems clear that the production potential and the quality of life in many regions of the world will deteriorate if nothing is done to counter the more

devastating effects of modern technology. It is not clear that only high population densities themselves will lead to deterioration of the life support system. Zelinsky (1966) points out that portions of Latin America have maintained larger populations than are now resident there for long periods of time without any apparent adverse effects upon the food-producing qualities of the land.

The relationship between high population densities and environmental decay is quite variable. Pierre George reflects on a symposium (Zelinsky, 1970) dealing with population pressure on resources with the following statement: "Underpopulation is perhaps the only factor which has disastrous consequences everywhere, for, paradoxically, it accelerates the destruction of nature's patrimony, that is to say, the production potential." In the same symposium Zelinsky notes: "field observations in the most crowded sections of the Guatemalan highlands, Costa Rica's Meseta Central, or the Mesaya uplands of Nicaragua indicate that, after centuries of intensive occupation, there is, at worst, only incipient sapping of their population.

Poverty

A cursory examination of the world patterns of poverty reveals it is not highly correlated with high population densities (Ackerman, 1967). Not only are rich countries more densely populated than most poor countries but poverty tends to be more intense in the sparsely settled regions within poor countries.

It is unrealistic to assume rapid population growth has a detrimental effect on economic development or per capita incomes themselves. Clearly it did not have that effect on the now highly developed economies of the world. Economists have been much more hesitant to equate population growth with declining incomes than have been some biologists. Indeed, many economists have suggested that rapid population growth can provide the "shock effect" or "challenge" which could stimulate rapid economic development.

The Boserup (1965) thesis lends theoretical support to the view that population growth may have been the principal cause for intensification and ultimately to greatly increased productivity with an expanding support system. It would seem ripe for testing in Boserup's model in Latin America.

Conclusions

The term overpopulation is being widely used in reference to Latin America, and yet one cannot find a map of the phenomenon in geographic literature. If the definitions in current use by some biologists (see Ehrlich and Ehrlich, 1970) are taken as the bases for a map, then virtually all of Latin America which is inhabited by the human species would be subject to such a classification. In short, the term has become a catchall for any human/resources problem which cannot be easily explained away by some other factor.

It is not my purpose here to deny the existence of population pressure in Latin America, or to maintain that rapid population growth is not cause for concern. I have attempted to point out that rapid population growth or high population densities do not necessarily cause low per-capita incomes, environmental decay, or decreasing amounts of living space. I have also stressed the need for further study into the positive effects of population growth on social and economic development.

Most Latin Americans hold opinions on the population issue which are quite different from those held by their North American counterparts. I believe it is an understatement to say many Latin Americans are suspicious of their powerful northern neighbor's concern with their population growth. We may dismiss the more biased theories of international conspiracy to maintain the status quo in Latin America through population control. But it would be naive to assume that political, social, and economic change, whether evolutionary or revolutionary, is unrelated to population growth. There is little possibility that the inefficient and grossly inequitable land tenure system of many Latin American countries can survive several decades of population growth at current rates. It should come as no surprise to those promoting population control in Latin America that some of their most eager listeners are among the "forces of order" --those who feel they have the most to lose when the population pressure builds too high against the present social order.

References cited

Ackerman, Edward. "Population, Natural Resources, and Technology," *The Annals of the American Academy of Political and Social Science*. Vol. 369, (1967), pp. 84-97.

Berry, Brian, et al. "Urban Population Densities: Structure and Change," *The Geographical Review*. Vol. 53, (1963), pp. 389-405.

Bolin, Bert. et al. *The Biosphere*. (San Francisco: W. H. Freeman & Co., 1970).

Boserup, Ester. *The Conditions of Agricultural Growth*. (Chicago: Aldine Publishing Company, 1965).

Detwyler, Thomas R. *Man's Impact on Environment*. (New York: McGraw-Hill Book Co., 1971).

Ehrlich, Paul R. and Anne H. Ehrlich. *Population, Resources, Environment; Issues in Human Ecology*. (San Francisco: W. H. Freeman & Co., 1970).

Gibbs, Jack. "The Evolution of Population Concentration," *Economic Geography*. Vol. 39, (1963), pp. 119-129.

Hall, Edward T. *The Hidden Dimension*. (Garden City, New York: Doubleday & Co., Inc., 1966).

_____. T*he Silent Language*. (Garden City, New York: Doubleday & Co., Inc., 1959).

Nunley, Robert. "Population Densities Using a New Approach: A Preliminary Report." *Revista Geográfica*. No. 65, (1967), pp. 55-93.

Zelinsky, Wilbur. "The Geographer and his Crowding World; Cautionary Notes Toward the Study of Population Pressure in the 'Developing Lands'", *Revista Geográfica*. No. 64, (1966), pp. 7-28.

_____. et al. (eds.) *Geography and a Crowding World*. (New York: Oxford University Press, 1970).