

## How Poverty Breeds Overpopulation (and not the other way around)

by Barry Commoner

© Ramparts, Aug/Sept 1975, pp.21-25,58-59.

The world population problem is a bewildering mixture of the simple and the complex, the clear and the confused.

What is relatively simple and clear is that the population of the world is getting larger, and that this process cannot go on indefinitely because there are, after all, limits to the resources, such as food, that are needed to sustain human life. Like all living things, people have an inherent tendency to multiply geometrically - that is, the more people there are the more people they tend to produce. In contrast, the supply of food rises more slowly, for unlike people it does not increase in proportion to the existing rate of food production. This is, of course, the familiar Malthusian relationship and leads to the conclusion that the population is certain eventually to outgrow the food supply (and other needed resources), leading to famine and mass death unless some other countervailing force intervenes to limit population growth. One can argue about the details, but taken as a general summary of the population problem, the foregoing statement is one which no environmentalist can successfully dispute.

When we turn from merely stating the problem to analyzing and attempting to solve it, the issue becomes much more complex. The simple statement that there is a limit to the growth of the human population, imposed on it by the inherent limits of the earth's resources, is a useful but abstract idea. In order to reduce it to the level of reality in which the problem must be solved, what is required is that we find the cause of the discrepancy between population growth and the available resources. Current views on this question are neither simple nor unanimous.

One view is that the cause of the population problem is uncontrolled fertility, the countervailing force - the death rate - having been weakened by medical advances. According to this view, given the freedom to do so people will inevitably produce children faster than the goods needed to support them. It follows, then, that the birthrate must be deliberately reduced to the point of "zero population growth."

The methods that have been proposed to achieve this kind of direct reduction in birthrate vary considerably. Among the ones advanced in the past are: (a) providing people with effective contraception and access to abortion facilities and with education about the value of using them (i.e., family planning); (b) enforcing legal means to prevent couples from producing more than some standard number of children ("coercion"); (c) withholding of food from the people of starving developing countries which, having failed to limit their birthrate sufficiently, are deemed to be too far gone or too unworthy to be saved (the so-called "lifeboat ethic").

It is appropriate here to illustrate these diverse approaches with examples. The family planning approach is so well known as to need no further exemplification. As to the second of these approaches, one might cite the following description of it by Kingsley Davis, a prominent demographer, which is quoted approvingly in a recent statement by "The

Environmental Fund" that is directed against the family planning position: "If people want to control population, it can be done with knowledge already available ... For instance, a nation seeking to stabilize its population could shut off immigration and permit each couple a maximum of two children, with possible license for a third. Accidental pregnancies beyond the limit would be interrupted by abortion. If a third child were born without a license, or a fourth, the mother would be sterilized." (Quoted from the Environmental Fund's Statement "Declaration on Population and Food"; original in *Daedalus*, Fall, 1973).

The author of the "lifeboat ethic" is Garrett Hardin, who stated in a recent paper (presented in San Francisco at the 1974 annual meeting of the American Association for the Advancement of Science) that: "So long as nations multiply at different rates, survival requires that we adopt the ethic of the lifeboat. A lifeboat can hold only so many people. There are more than two billion wretched people in the world - ten times as many as in the United States. It is literally beyond our ability to save them all ... Both international granaries and lax immigration policies must be rejected if we are to save something for our grandchildren."

Actually, this recent statement only cloaks, in the rubric of an "ethic," a more frankly political position taken earlier by Hardin: "Every day we (i.e., Americans) are a smaller minority. We are increasing at only one percent a year; the rest of the world increases twice as fast. By the year 2000, one person in 24 will be an American; in one hundred years only one in 46 ... If the world is one great commons, in which all food is shared equally, then we are lost. Those who breed faster will replace the rest ... In the absence of breeding control a policy of 'one mouth one meal' ultimately produces one totally miserable world. In a less than perfect world, the allocation of rights based on territory must be defended if a ruinous breeding race is to be avoided. It is unlikely that civilization and dignity can survive everywhere; but better in a few places than in none. Fortunate minorities must act as the trustees of a civilization that is threatened by uninformed good intentions." (*Science*, Vol. 172, p. 1297; 1971).

## **The Quality of Life**

But there is another view of population which is much more complex. It is based on the evidence, amassed by demographers, that the birthrate is not only affected by biological factors, such as fertility and contraception, but by equally powerful social factors.

Demographers have delineated a complex network of interactions among these social factors. This shows that population growth is not the consequence of a simple arithmetic relationship between birthrate and death rate. Instead, there are circular relationships in which, as in an ecological cycle, every step is connected to several others.

Thus, while a reduced death rate does, of course, increase the rate of population growth, it can also have the opposite effect - since families usually respond to a reduced rate of infant mortality by opting for fewer children. This negative feedback modulates the effect of a decreased death rate on population size. Similarly, although a rising population increases the demand on resources and thereby worsens the population problem, it also stimulates economic activity. This, in turn, improves educational levels. As a result the average age at marriage tends to increase, culminating in a reduced birthrate - which mitigates the pressure on resources.

In these processes, there is a powerful social force which, paradoxically, both reduces the death rate (and thereby stimulates population growth) and also leads people voluntarily to restrict the production of children (and thereby reduces population growth). That force,

simply stated, is the quality of life - a high standard of living, a sense of well being and of security in the future. When and how the two opposite effects of this force are felt differs with the stages in a country's economic development. In a pre-modern society, such as England before the industrial revolution or India before the advent of the English, both death rates and birthrates were high. But they were in balance and population size was stable. Then, as agricultural and industrial production began to increase and living conditions improved, the death rate began to fall. With the birthrate remaining high the population rapidly increased in size. However, later, as living standards continued to improve, the decline in death rate persisted but the birthrate began to decline as well, reducing the rate of population growth.

For example, at around 1800, Sweden had a high birthrate (about 33/1000), but since the death rate was equally high, the population was in balance. Then as agriculture and, later, industrial production advanced, the death rate dropped until, by the mid-nineteenth century, it stood at about 20/1000. Since the birthrate remained constant during that period of time, there was a large excess of births over deaths and the population increased rapidly. Then, however, the birthrate began to drop, gradually narrowing the gap until in the mid-twentieth century it reached about 14/1000, when the death rate was about 10/1000. Thus under the influence of a constantly rising standard of living the population moved, with time, from a position of balance at a high death rate to a new position of near-balance at a low death rate. But in between the population increased considerably.

This process, the demographic transition, is clearly characteristic of all western countries. In most of them, the birthrate does not begin to fall appreciably until the death rate is reduced below about 20/1000. However, then the drop in birthrate is rapid. A similar transition also appears to be under way in countries like India. Thus in the mid-nineteenth century, India had equally high birth and death rates (about 50/1000) and the population was in approximate balance. Then, as living standards improved, the death rate dropped to its present level of about 15/1000 and the birthrate dropped, at first slowly and recently more rapidly, to its present level of 42/1000. India is at a critical point; now that death rate has reached the turning point of about 20/1000, we can expect the birthrate to fall rapidly - provided that the death rate is further reduced by improved living conditions.

One indicator of the quality of life - infant mortality - is especially decisive in this process. And again there is a critical point - a rate of infant mortality below which birthrate begins to drop sharply and, approaching the death rate, creates the conditions for a balanced population. The reason is that couples are interested in the number of surviving children and respond to a low rate of infant mortality by realizing that they no longer need to have more children to replace the ones that die. Birth control is, of course, a necessary adjunct to this process; but it can succeed - barring compulsion - only in the presence of a rising standard of living, which of itself generates the necessary motivation.

This process appears to be just as characteristic of developing countries as of developed ones. This can be seen by plotting the present birthrates against the present rates of infant mortality for all available national data. The highest rates of infant mortality are in African countries; they are in the range of 53-175/1000 live births and birthrates are about 27-52/1000. In those countries where infant mortality has improved somewhat (for example, in a number of Latin American and Asian countries) the drop in birthrate is slight (to about 45/1000) until the infant mortality reaches about 80/1000. Then, as infant mortality drops from 80/1000 to about 25/1000 (the figure characteristic of most developed countries), the birthrate drops sharply from 45 to about 15-18/1000. Thus a rate of infant mortality of

80/1000 is a critical turning point which can lead to a very rapid decline in birthrate in response to a further reduction in infant mortality. The latter, in turn, is always very responsive to improved living conditions, especially with respect to nutrition. Consequently, there is a kind of critical standard of living which, if achieved, can lead to a rapid reduction in birthrate and an approach to a balanced population.

Thus, in human societies, there is a built-in control on population size. If the standard of living, which initiates the rise in population, continues to increase, the population eventually begins to level off. This self-regulating process begins with a population in balance, but at a high death rate and low standard of living. It then progresses toward a population which is larger, but once more in balance, at a low death rate and a high standard of living.

## **Demographic Parasites**

The chief reason for the rapid rise in population in developing countries is that this basic condition has not been met. The explanation is a fact about developing countries which is often forgotten - that they were recently, and in the economic sense often still remain, colonies of more developed countries. In the colonial period, western nations introduced improved living conditions (roads, communications, engineering, agricultural and medical services) as part of their campaign to increase the labor force needed to exploit the colony's natural resources. This increase in living standards initiated the first phase of the demographic transition.

But most of the resultant wealth did not remain in the colony. As a result, the second (or population-balancing) phase of the demographic transition could not take place. Instead the wealth produced in the colony was largely diverted to the advanced nation - where it helped that country achieve for itself the second phase of the demographic transition. Thus colonialism involves a kind of demographic parasitism. The second, population-balancing phase of the demographic transition in the advanced country is fed by the suppression of that same phase in the colony.

It has long been known that the accelerating curve of wealth and power of Western Europe, and later of the United States and Japan, has been heavily based on exploitation of resources taken from the less powerful nations: colonies, whether governed legally, or - as in the case of the U.S. control of certain Latin American countries - by extra-legal and economic means. The result has been a grossly inequitable rate of development among the nations of the world. As the wealth of the exploited nations was diverted to the more powerful ones, their power, and with it their capacity to exploit, increased. The gap between the wealth of nations grew, as the rich were fed by the poor.

What is evident from the above considerations is that this process of international exploitation has had another very powerful but unanticipated effect: a rapid growth of the population in the former colonies. An analysis by the demographer, Nathan Keyfitz, leads him to conclude that the growth of industrial capitalism in the western nations in the period 1800-1950 resulted in the development of a one billion excess in the world population, largely in the tropics. Thus the present world population crisis - the rapid growth of population in developing countries (the former colonies) - is the result not so much of policies promulgated by these countries but of a policy, colonial exploitation, forced on them by developed countries.

## A Village in India

Given this background, what can be said about the various alternative methods of achieving a balanced world population? In India, there has been an interesting, if partially inadvertent, comparative test of two of the possible approaches: family planning programs and efforts (also on a family basis), to elevate the living standard. The results of this test show that while the family planning effort itself failed to reduce the birthrate, improved living standards succeeded.

In 1954, a Harvard team undertook the first major field study of birth control in India. The population of a number of test villages was provided with contraceptives and suitable educational programs; birthrates, death rates and health status in this population were compared with the comparable values in an equivalent population in control villages. The study covered the six-year period 1954-1960.

A follow-up in 1969 showed that the study was a failure. Although in the test population the crude birthrate dropped from 40 per 1,000 in 1957 to 35 per 1,000 in 1968, a similar reduction also occurred in the control population. The birth control effort had no measurable effect on birthrate.

We now know why the study failed, thanks to a remarkable book by Mahmood Mamdani (*The Myth of Population Control*, Monthly Review Press, New York, 1972). He investigated in detail the impact of the study on one of the test villages, Manupur. What Mamdani discovered is a total confirmation of the view that population control in a country like India depends on the economically-motivated desire to limit fertility. Talking with the Manupur villagers he discovered why, despite the study's statistics regarding ready "acceptance" of the offered contraceptives, the birthrate was not affected:

"One such 'acceptance' case was Asa Singh, a sometime land laborer who is now a watchman at the village high school. I questioned him as to whether he used the tablets or not: 'Certainly I did. You can read it in their books - From 1957 to 1960, I never failed.' Asa Singh, however, had a son who had been born sometime in 'late 1958 or 1959.' At our third meeting I pointed this out to him ... Finally he looked at me and responded 'Babuji, someday you'll understand. It is sometimes better to lie. It stops you from hurting people, does no harm, and might even help them.' The next day Asa Singh took me to a friend's house ... and I saw small rectangular boxes and bottles, one piled on top of the other, all arranged as a tiny sculpture in a corner of the room. This man had made a sculpture of birth control devices. Asa Singh said: 'Most of us threw the tablets away. But my brother here, he makes use of everything.'"

Such stories have been reported before and are often taken to indicate how much "ignorance" has to be overcome before birth control can be effective in countries like India. But Mamdani takes us much further into the problem, by finding out why the villagers preferred not to use the contraceptives. In one interview after another he discovered a simple, decisive fact: that in order to advance their economic condition, to take advantage of the opportunities newly created by the development of independent India, children were essential. Mamdani makes this very explicit:

"To begin with, most families have either little or no savings, and they can earn too little to be able to finance the education of any children, even through high school. Another source of income must be found, and the only solution is, as one tailor told me, 'to have enough children so that there are at least three or four sons in the family.' Then each son can finish

high school by spending part of the afternoon working ... After high school, one son is sent on to college while the others work to save and pay the necessary fees ... Once his education is completed, he will use his increased earnings to put his brother through college. He will not marry until the second brother has finished his college education and can carry the burden of educating the third brother ... What is of interest is that as the Khanna Study pointed out, it was the rise in the age of marriage - from 17.5 years in 1956 to 20 in 1969 - and not the birth control program that was responsible for the decrease in the birthrate in the village from 40 per 1,000 in 1957 to 35 per 1,000 in 1968. While the birth control program was a failure, the net result of the technological and social change in Manupur was to bring down the birth rate."

Here, then, in the simple realities of the village of Manupur are the principles of the demographic transition at work. There is a way to control the rapid growth of populations in developing countries. It is to help them develop - and more rapidly achieve the level of welfare that everywhere in the world is the real motivation for a balanced population.

### **Enough to Go Around**

Against this success, the proponents of the "lifeboat ethic" would argue that it is too slow, and they would take steps to force developing nations to reduce their birthrate even though the incentive for reduced fertility - the standard of living and its most meaningful index, infant mortality - is still far inferior to the levels which have motivated the demographic transition in the western countries. And where, in their view, it is too late to save a poor, overpopulated country the proponents of this so-called "ethic" would withdraw support (in the manner of the hopelessly wounded in military "triage") and allow it to perish.

This argument is based (at least in the realm of logic) on the view, to quote Hardin, that "It is literally beyond our ability to save them all." Hardin's assertion, if not the resulting "ethic," reflects a commonly held view that there is simply insufficient food and other resources in the world to support the present world population at the standard of living required to motivate the demographic transition. It is commonly pointed out, for example, that the U.S. consumes about one-third of the world's resources to support only six percent of the world's population, the inference being that there are simply not enough resources in the world to permit the rest of the world to achieve the standard of living and low birthrate characteristic of the U.S.

The fault in this reasoning is readily apparent if one examines the actual relationship between the birthrates and living standards of different countries. The only available comparative measure of standard of living is GNP per capita. Neglecting for a moment the faults inherent in GNP as a measure of the quality of life, a plot of birthrate against GNP per capita is very revealing. The poorest countries (GNP per capita less than \$500 per year) have the highest birthrates, 40-50 per 1,000 population per year. When GNP per capita per year exceeds \$500 the birthrate drops sharply, reaching about 20/1,000 at \$750-\$1000. Most of the nations in North America, Oceania, Europe and the USSR have about the same low birthrates - 15-18/1,000 - but their GNP's per capita per year range all the way from Greece (\$941 per capita per year; birthrate 17/1,000) through Japan (\$1,626 per capita per year; birthrate 18/1,000) to the richest country of all, the U.S. (\$4,538 per capita per year; birthrate 18/1,000). What this means is that in order to bring the birthrates of the poor countries down to the low levels characteristic of the rich ones, the poor countries do not need to become as affluent (at least as measured, poorly, by GNP per capita) as the U.S. Achieving a per capita GNP only, let us say, one-fifth of that of the U.S. - \$900 per capita per year - these countries could, according to the above relationship, reach birthrates almost

as low as that of the European and North American countries.

The world average value for birthrate is 34/1,000, which is indicative of the overall rate of growth of the world population (the world average crude death rate is about 13/1,000). However, the world average per capita GNP is about \$803 per year - a level of affluence which is characteristic of a number of nations with birthrates of 20/1,000. What this discrepancy tells us is that if the wealth of the world (at least as measured by GNP) were in fact evenly distributed among the people of the world, the entire world population should have a low birthrate - about 20/1,000 - which would approach that characteristic of most European and North American countries (15-18/1,000).

Simply stated, the world has enough wealth to support the entire world population at a level that appears to convince most people that they need not have excessive numbers of children. The trouble is that the world's wealth is not evenly distributed, but sharply divided among moderately well-off and rich countries on the one hand and a much larger number of people that are very poor. The poor countries have high birthrates because they are extremely poor, and they are extremely poor because other countries are extremely rich.

## The Roots of Hunger

In a sense the demographic transition is a means of translating the availability of a decent level of resources, especially food, into a voluntary reduction in birthrate. It is a striking fact that the efficiency with which such resources can be converted into a reduced birthrate is much higher in the developing countries than in the advanced ones. Thus an improvement in GNP per capita per year from let us say \$682 (as in Uruguay) to \$4,538 (U.S.) reduces birthrate from 22/1,000 to 18/1,000. In contrast, according to the above relationships if the GNP per capita per year characteristic of India (about \$88) were increased to only about \$750, the Indian birthrate should fall from its actual value of about 42/1,000 to about 20/1,000. To put the matter more simply, the per capita cost of bringing the standard of living of poor countries with rapidly growing populations to the level which - based on the behavior of people all over the world - would motivate voluntary reduction of fertility is very small, compared to the per capita wealth of developed countries.

Food plays a critical role in these relationships. Hunger is widespread in the world and those who believe that the world's resources are already insufficient to support the world population cite this fact as the most powerful evidence that the world is overpopulated. Conversely, those who are concerned with relieving hunger and preventing future famines often assert that the basic solution to that problem is to control the growth of the world population.

Once more it is revealing to examine actual data regarding the incidence of malnutrition. From a detailed study of nutritional levels among various populations in India by Revelle & Frisch (Vol. III, "The World Food Problem," A Report of the President's Science Advisory Committee, Washington, 1967) we learn, for example, that in Madras State more than one-half the population consumes significantly less than the physiologically required number of calories and of protein in their diet. However, the average values for all residents of the state represents 99 percent of the calorie requirement and 98 percent of the protein requirement. What this means, of course, is that a significant part of the population receives more than the required dietary intake. About one-third of the population receives 106 percent of the required calories and 104 percent of the required protein, about 8 percent of the population receives 122 percent or more of the calorie requirement and 117 percent or more of the protein requirement. These dietary differences are determined by income. The

more than one-half of the population that is significantly below the physiologically required diet earn less than \$21 per capita per year, as compared with the state-wide average of \$33.40.

What these data indicate is that hunger in Madras State, defined simply in terms of a significantly inadequate intake of calories and protein, is not the result of a biological factor - the inadequate production of food. Rather, in the strict sense, it results from the social factors that govern the distribution of available food among the population.

In the last year, newspaper stories of actual famines in various parts of the world have also supported the view that starvation is usually not caused by the insufficient production of food in the world, but by social factors that prevent the required distribution of food. Thus, in Ethiopia many people suffered from starvation because government officials failed to mobilize readily available supplies of foreign grain. In India, according to a recent New York Times report, inadequate food supplies were due in part from a government policy which "resulted in a booming black market, angry resentment among farmers and traders, and a breakdown in supplies." The report asserts further that "The central problem of India - rooted poverty - remains unchecked and seems to be getting worse. For the third year out of four per capita income is expected to drop. Nearly 80 percent of the children are malnourished ... The economic torpor seems symptomatic of deeper problems. Cynicism is rampant: the Government's socialist slogans and calls for austerity are mocked in view of bribes and corruption, luxury construction and virtually open illegal contributions by businessmen to the Congress party." (New York Times, Apr. 17, 1974)

Given these observations and the overall fact that the amount of food crop produced in the world at present is sufficient to provide an adequate diet to about eight billion people - more than twice the world population - it appears to me that the present, tragically widespread hunger in the world cannot be regarded as evidence that the size of the world population has outrun the world's capacity to produce food. I have already pointed out that we can regard the rapid growth of population in developing countries and the grinding poverty which engenders it as the distant outcome of colonial exploitation - a policy imposed on the antecedents of the developing countries by the more advanced ones. This policy has forcefully determined both the distribution of the world's wealth and of its different populations, accumulating most of the wealth in the western countries and most of the people in the remaining, largely tropical, ones.

Thus there is a grave imbalance between the world's wealth and the world's people. But the imbalance is not the supposed disparity between the world's total wealth and total population. Rather, it is due to the gross distributive imbalance among the nations of the world. What the problem calls for, I believe, is a process that now figures strongly in the thinking of the peoples of the Third World: a return of some of the world's wealth to the countries whose resources and peoples have borne so much of the burden of producing it - the developing nations.

## **Wealth Among Nations**

There is no denying that this proposal would involve exceedingly difficult economic, social and political problems, especially for the rich countries. But the alternative solutions thus far advanced are at least as difficult and socially stressful.

A major source of confusion is that these diverse proposed solutions to the population



problem, which differ so sharply in their moral postulates and their political effects, appear to have a common base in scientific fact. It is, after all, equally true, scientifically, that the birthrate can be reduced by promulgating contraceptive practices (providing they are used), by elevating living standards, or by withholding food from starving nations.

But what I find particularly disturbing is that behind this screen of confusion between scientific fact and political intent there has developed an escalating series of what can be only regarded, in my opinion, as inhumane, abhorrent political schemes put forward in the guise of science. First we had Paddock's "triage" proposal, which would condemn whole nations to death through some species of global "benign neglect." Then we have schemes for coercing people to curtail their fertility by physical and legal means which are ominously left unspecified. Now we are told (for example, in the statement of "The Environmental Fund") that we must curtail rather than extend our efforts to feed the hungry peoples of the world. Where will it end? Is it conceivable that the proponents of coercive population control will be guided by one of Garrett Hardin's earlier, astonishing proposals: "How can we help a foreign country to escape over-population? Clearly the worst thing we can do is send food ... Atomic bombs would be kinder. For a few moments the misery would be acute, but it would soon come to an end for most of the people, leaving a very few survivors to suffer thereafter" ("The Immorality of Being Softhearted," Stanford Alumni Almanac, Jan. 1969).

There has been a long-standing alliance between pseudo-science and political repression; the Nazis' genetic theories, it will be recalled, were to be tested in the ovens at Dachau. This evil alliance feeds on confusion.

The present confusion can be removed by recognizing all of the current population proposals for what they are - not scientific observations but value judgments that reflect sharply differing ethical views and political intentions. The family planning approach, if applied as the exclusive solution to the problem, would put the burden of remedying a fault created by a social and political evil - colonialism - voluntarily on the individual victims of the evil. The so-called "lifeboat ethic" would compound the original evil of colonialism by forcing its victims to forego the humane course toward a balanced population, improvement of living standards, or if they refuse, to abandon them to destruction, or even to thrust them toward it.

My own purely personal conclusion is, like all of these, not scientific but political: that the world population crisis, which is the ultimate outcome of the exploitation of poor nations by rich ones, ought to be remedied by returning to the poor countries enough of the wealth taken from them to give their peoples both the reason and the resources voluntarily to limit their own fertility.

In sum, I believe that if the root cause of the world population crisis is poverty, then to end it we must abolish poverty. And if the cause of poverty is the grossly unequal distribution of world's wealth, then to end poverty, and with it the population crisis, we must redistribute that wealth, among nations and within them.

[TOP OF PAGE](#)