Putting the "Population Explosion" in Perspective

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It is not my province to write about the morality of abortion, or whether people can reconcile the performance of an abortion with their conscience. My concern is that so many people have become obsessed with the idea, first promulgated by Malthus, that the world was over-populated, and starving in consequence, that they have set all questions of conscience aside in their determination to keep population down.

"And frightful dreams and real fears, alas! Before their soggy haunted vision pass Not least the Reverend Malthus with his trick Of killing conscience by arithmetic,"

as James MacAuley wrote.

But even if the facts were what these people believe them to be, it would still be quite irrational to perform an abortion in Australia because there were too many people in India. People who talk in this way are acting on emotion, not on reason. If ever there was a country which urgently needed more population, for every reason, economic, political and cultural, it is Australia.

Agricultural Production Advancing Rapidly

In any case, the facts are not in the least what most people believe them to be. There is hunger and malnutrition in the world, but to nothing like the extent of half or two-thirds of the world population. Most of it is to be found in China, where it is due to Communist misgovernment, and in India, where there is enough food to go round, but the lower castes are systematically kept hungry and denied economic opportunities. Agricultural production has been advancing faster than population, not only in the advanced countries, but in almost every country in the world, to the point where there is considerable anxiety about being able to sell agricultural produce, as Australian exporters know only too well.

These anxieties (from the point of view of countries such as Australia, which are sellers of agricultural produce) must now be greatly accentuated by the breeding of IR8 rice in the Philippines, and the new varieties of short-stemmed wheat from Mexico, which have shown themselves capable of being grown in most parts of Asia, and which even the most cautious agricultural scientists certify as capable of giving yields far higher than have been seen in the world before. The menace of world food shortage (which has been exaggerated in any case) is over, and the world is now faced with the very different problem of a prospective glut of agricultural produce.

Earning Capacity Increasing

Neither is it permissible to say that the poor countries would like to buy these surpluses of food, but lack any money to do so. Over the last decade the money which the developing countries have been earning from their exports has been rising at the rate of 4.5% per year, much faster than their

population, quite apart from the foreign aid which they have been receiving, while world prices of food have been falling. In fact, the developing countries have preferred to spend most of this large increase in the money at their disposal on commodities other than food; and they know their own needs best.

Supposed World Hunger

Most people approach this subject under grave misconceptions about the facts. It is not their fault, because they have to listen to repeated statements, often by people who should know better, about supposed world hunger. The widely circulated statement, still believed by some, that two-thirds of the world's population is actually hungry, is based on simple errors, not only in the estimation of physiological requirements, but also in the arithmetical calculations from the available statistics. More recently the World Food and Agriculture Organization lent their weight to the statement that half the world's population was suffering from malnutrition, though without producing any evidence for it. Eventually after much delay and evasion, F.A.O. admitted that they defined as malnourished anyone who did not eat like the inhabitants of Western Europe. Medical evidence would indicate that people who eat as we do are more in danger of over-nutrition, rather than constituting the borderline of under-nutrition.

I do not wish to claim that the world is free from hunger and malnutrition. There are certain limited areas in Africa, Asia, New Guinea and Latin America whose inhabitants live primarily on root crops. There is real danger here of protein malnutrition. Over most of these continents, however, people live on grains, mostly containing 10 per cent or more of protein, which will meet requirements if supplemented with fresh fruits, vegetables and small quantities of animal food.

India and China

Among these grain-eating countries there is, however, evidence of considerable malnutrition in India and China. In India, 17 percent of schoolchildren were found to suffer from protein shortage, and in recent years there have been extreme food shortages in China. Much of these latter were due to crass political interference with an ancient and delicately balanced agricultural system. Much of the hunger in India is also explained by the deliberate economic deprivations to which the lower castes are subjected, and also to exceptionally low yields. If the Indian farmer cultivated his land as carefully as the Japanese, he would obtain nearly four times the yield of rice from the same area.

Many people are also under the erroneous impression that the world's potential agricultural lands are already fully utilized, and in danger of exhaustion. In Africa only about 3 per cent of the potentially cultivable land is actually cultivated in any year. Even in Asia there are large reserves of good potential agricultural land still untouched, to say nothing of Latin America and Australia. Over most of Africa, the primitive and wasteful practice still prevails of burning down a stretch of forest, planting crops among the ashes on the cleared land, and then, after a year or two, abandoning it for anything up to twenty years, for the forest and soil to recuperate.

Shortage of Agricultural Land,

But if not now, will we not in the near future be faced with a shortage of agricultural land to feed the world's population? Of course we cannot feed an indefinitely large population; but the limits of agricultural potentiality are much further in the future than is generally supposed. It is no use asking how much space is required to feed each person, until you specify how he is going to eat, and how efficient is the agriculture which supplies him. People eating at Australian or North American or

Western European standards (and if we ate any more we would probably be endangering our health) need, if good modern agricultural methods are used, about 2500 sq. metres (a little over half an acre, or 1/400th of a square kilometre) per head to provide their requirements of agricultural and forest products.

The recent tendency to consume more poultry, pork and other meat produced indirectly from grain rather than from grazing, represents a considerable economy of land. The land surface of the world (excluding Greenland and Antarctica) measures 131 million square kilometres, of which only 8.6 million are altogether too cold for agricultural use. Truly arid deserts measure 22.6 million square kilometres. A further 20 million square kilometres of semi-arid land can be used for grazing and also for occasional agriculture, but we will leave this out in the calculations which follow. The rest of the world's surface is capable of being farmed, although 7.5 million square kilometres are rated by geographers as "seriously sub-humid" and maybe subject to intermittent crop failures (western Colorado climates). There is also a very large area, some 14.5 million square kilometres in all, of cold-climate country, mostly in Alaska, Canada and Soviet Russia, which has hitherto been rather neglected by geographers but which has been shown by experiments in Sweden and Finland to be capable of considerable farm production when required.

Discounting anything up to half the area of unusually dry or unusually cold lands, but at the same time allowing for the 10 million square kilometres of high-rainfall tropical land which are capable, with fertilization, of regularly growing several crops every year, we conclude that even at our high level of consumption the world's available agricultural land could feed over 40 billion people, before we made any attempt to reclaim mountains or deserts, or to obtain food from the ocean. If we consumed and produced in the manner of the Japanese, who after all are quite a healthy people, our space requirements would be reduced to one-third of this, and we could provide for three times as many people.

Improving Techniques

And even these figures have not taken into account possible further improvements in agricultural technique, which are almost certain to take place, or food obtainable from the sea. If we calculate on the basis of the best results so far obtained in agricultural laboratories, a man could obtain a permanent food supply, if he had to, by the continuous cultivation of only 25 square metres of land.

These, however, are the sort of figures more likely to concern space travellers than earth-bound agriculturalists. I am not impressed by the exploits of arithmeticians who demonstrate that if world population goes on increasing at its present rate, our descendants will be left with only one square foot of land per head in some seven centuries time. If numbers do go on increasing - that is to say, if we and our descendants succeed in avoiding great epidemics, wars and social upheavals (and we are by no means entitled to count on this) - the increase in numbers will be accompanied by great increases in economic productivity. In the United States and in most other industrial countries, productivity increases are now taking place at a sufficient rate to double productivity in thirty years, and there is every sign that they will continue. At this rate, our descendants, only three centuries hence, will be a thousand times as productive as we are. The tasks of building space ships or large artificial satellites on which people can live, or of colonizing inhospitable planets, far beyond our resources, will be well within their capacity. Indeed, if things go well and the world avoids catastrophe, our descendants will probably be glad to find uses for the very high productivity which they will by then have attained. Otherwise, they might be in danger of perishing from boredom.

Population Growth...

In a community where every girl married young, and widows quickly re-married and no restrictions were placed on conception, the average woman would have produced about eight offspring if she had survived to the end of her reproductive period. In a primitive hunting community - the state of life for the whole human race outside the last few thousand years of our million or so years of existence on this planet - this rate of reproduction almost exactly suffices to replace the heavy mortality suffered by such communities, keeping mankind, if you like to put it that way, in a state of "ecological equilibrium". Population increases in such primitive hunting communities, whether calculated by archeologists from the past, or observed by anthropoligists in the present, are extremely slow, if indeed they take place at all. Such people, while living at a very low population density, nevertheless feel themselves over-populated in relation to their resources.

I like to picture our ancestors in the Middle Stone Age, about 5000 B.C. The population of the British Isles had risen to some 20,000, and it was quite clear that the country could not support any more, if each family was to have adequately sized hunting and fishing grounds. I envisage the wise men of the tribes holding meetings, pointing out the urgent need for family limitations. Some rash young man may have suggested trying agriculture, which had recently been discovered in Egypt and Babylonia, which made it possible to feed a large population on a much smaller area, only to be told that this certainly would not work in the British Isles. However, we know what happened. Eventually, with immense reluctance, our ancestors had to give up their agreeable hunting and fishing, and take to the laborious and degrading pursuit of agriculture.

While this account is fictional, we have more precise information about the situation in America, where what is now the territory of the United States and Canada was carrying a population of about one million at the beginning of the 16th century, and these people were finding the country seriously over-populated. In their case, a much more advanced civilization, based on maize growing, was available near at hand in Mexico, and knowledge of agriculture spread northward quite rapidly.

In some parts of Europe, agricultural methods, based upon ox-ploughs, did not change very much from the late Stone Age until the present century, as sardonic critics have pointed out. But England had an agricultural revolution, if we recollect what we read in our history books, in a "1066 and All That" style, about a man called Townsend who invented turnips, and so on. The actual truth is that many of the improvements in agriculture, such as the growing of turnips and lucerne (though not of course potatoes) were known in the ancient world, and neglected in medieval Europe, and restored when population growth demanded it. This theory is confirmed by the first appearance of such improvements in the most densely populated parts of Europe, such as the Low Countries and Northern Italy, reaching England much later - though even so, they did not all come in a rush in the late 18th century, as the traditional history books would have us believe.

Then Agricultural Advances

The Malthusian doctrine, so widely accepted, is that technical improvements in agriculture may come, but that they are always followed by a growth of population. leaving people no better off than before.

But closer analysis shows that this is, in most cases, the opposite to the truth - population increase generally comes first, and then, usually with great reluctance, people adopt technically more efficient methods because they have to provide for the increased population. The strongest reason

for believing that things work this way round is that almost every technical improvement in agriculture involves, in its initial stages, harder and more disagreeable work than the methods previously used. Technical knowledge, in most countries, is available well ahead of the actual adoption of technical improvements.

Africans know about more intensive systems of agriculture, but do not practice them because they are more laborious, until compelled to do so by the growth of population, which must thus be regarded as an economically beneficial factor. We can trace such economic effects of population growth all the way up the scale from primitive hunting and fishing communities, through various crude forms of agriculture, to intensive agriculture with its careful preservation of soil fertility.

Advantages in Industry

Population growth brings advantages in agriculture but even more marked advantages in industry. These are the reasons why the world which is now going through a "population explosion", is now also going through a far greater "wealth explosion". Throughout the world, with very few exceptions, the rate of advance of production per head during the last two decades has been much higher than it ever was before. The economic facts are perfectly clear to anyone who will look at them: most people prefer not to look at them, but to make up facts which accord with their prejudices.

The economic advantages of being a densely populated country with growing population were perceived as long ago as the 17th century by Sir William Petty, in contrasting us with the Dutch, our successful naval and commercial rivals. Every industrial country has to pay for very large "indivisibilities," the transport system and harbours, the apparatus of government, the professions and education, which are needed on much the same scale for a densely and for a sparsely populated country. The principal source of economic improvement is the ever increasing subdivision and specialization of industrial processes; but the extent of such specialization is limited by the extent of the market, as was clear to Adam Smith. Erroneous investment decisions, both public and private, are bound to occur in all communities, but their effects can be more rapidly put right under conditions of growing than of stationary populations. Comparisons by Professor Kuznetz, the leading authority in this field, of rates of growth of national product per head with rates of growth of population completely failed to indicate the negative correlation, which would be expected if the Malthusian theory were true. Experience of a number of countries has shown that population growth at rates as high as 3 per cent per annum, where no more agricultural land is available, can be successfully diverted into industry, with still rising productivity.

Rate of Savings

Population growth also leads to an increase in the rate of savings. It is true that there are more children to be fed. But a rapidly growing population contains relatively fewer old people, and a higher proportion of men in the prime of life, able and willing to save (and without those expectations of legacies which are often destructive of the saving incentive in a country such as this). This is not merely a theoretical proposition. In India the rate of saving (Reserve Bank calculations) has risen from 5 per cent of net national income in the early 1950s to 9 per cent in recent years. The per head supply of industrial products in India is rapidly improving - it is Indian agriculture whose output is only just keeping pace with population growth. There are signs however that India is now giving agriculture some of the attention which it should have received two decades ago.

There is another phenomenon which has been observed in every industrial country. Certain favoured regions already densely populated, appear to possess the ability of attracting to themselves further industry and population to an inordinate degree. Indeed the truth is, in such cases, that the effect of population growth is not poverty, but excessive wealth. It is true that these industrial areas of rapidly growing population suffer a number of difficulties, such as pressure on the public services, or traffic congestion, and difficulty of access to the countryside. These difficulties can be put right by good planning. But they are not signs of economic poverty.

Ancient Greeks

Regarding the development from an agricultural to an urban and commercial civilization, the first and in many ways the most interesting example known to us of a people outrunning their agricultural resources was the ancient Greeks. As early as the seventh century B.C., the poet Hesiod was complaining bitterly that the country was becoming over-populated and that things were not as easy as they had been a generation or two earlier. By this time, Greek immigrants were already building commercial cities on uninhabited land all around the Mediterranean; they had got as far as Marseilles by 622 B.C. A century or two later, when Greek civilization was at its height, most of densely populated Greece was living by manufacture and commerce or the production of specialized crops for export. It is true that slavery existed as an institution, but the slaves numbered only a small minority of the population, and most of the work was done by free men. Besides their extraordinary economic development, the Greeks made still greater achievements in the intellectual and cultural fields. Greek sculpture, architecture, poetry, history, philosophy, mathematics, and science laid the essential foundations of the culture by which we live and which we transmit to our children today.

In the ever-deepening chaos which came over Europe between the second and the tenth centuries, there was no net population growth, and probably a decline. The great achievements of mediaeval civilization, particularly in France, came at a time of rapid population growth. But the next example which we have of a people outrunning their agricultural resources was the Dutch, trying to make a living on their scanty sand banks, at the beginning of the seventeenth century. This pressure of population on resources provoked one of the most astonishing outbursts of national vigour which the world has ever seen. After fighting Spain, the greatest military power of the time, to a standstill, the Dutch rapidly transformed themselves into the leading maritime and commercial power of the world. In 1653, they founded New York. At the same time they were founding Cape Town and Jakarta and discovering Australia. And the work of Dutch painters and scientists during this period made an imperishable contribution to the culture of the world.

British Population Growth

Next came the turn of the British, traditionally a slow moving people. By the second half of the eighteenth century, it was clear that the old easy-going agricultural methods could no longer support the increasing population of the island. Large numbers emigrated to North America, where they married young, enjoyed good health, and produced a rapid population increase. This population increase is the indubitable reason (as European historians point out) why the language, law, and culture of North America now is not French or Spanish. The British who stayed at home also effected at this time a radical transformation of their society - economic, political and cultural - out-stripping the achievements of the Dutch in improving agricultural and industrial technique, and

producing an outstanding science and literature (though we had better not say anything about the state of the visual arts in nineteenth-century England).

Writing in 1798, the Rev. Thomas Robert Malthus, whose ideas have done so much harm in the world, apparently quite unaware of the improvements in agricultural and industrial technology which were going on all around him, contended that with 10 million people, Britain was greatly over-populated and what was needed was not any form of contraception (which he condemned outright), but a universal encouragement of late marriage. Had the rapid increase of British and Irish population, which began about the middle of the eighteenth century, not taken place, the United States and Australia might never have come into being, and Britain would have remained an unprogressive eighteenth-century agrarian community with the rest of Europe following her example.

French Population Decline

The country which did listen to Malthus was not Britain but France, where a heavy fall in the size of family began in the early nineteenth century. As the leader of the French delegation said, unanswerably, at the recent World Population Conference, if population restriction were a way of achieving economic advancement, France would be the richest country in the world by now. French economic development is now proceeding rapidly. But it started late. Leading French economic historians agree that one of the principal causes of this late start was the nineteenth century check on population growth. The French peasant was left with little incentive to change his methods of farming or to seek industrial employment. Apart from economic effects, every Frenchman by now is also bitterly aware of the effect which the check on population growth has had on his country's political position in the world, compared with what it was in the eighteenth and nineteenth centuries. Even someone who has convinced himself of the desirability of population limitation on economic grounds must be aware that all countries will not be persuaded to limit their population uniformly, and those that impose lesser restrictions are bound to gain in political influence relative to those that impose greater ones.

19th Century Japan

By the late nineteenth century came the turn of Japan, in some ways the most remarkable example of all. When the Emperor Meiji began the modernization of Japan in 1868, it was far poorer and more primitive than any Asian country is today; moreover, for fear of the political interference which might come with it, he forbade his people to accept any foreign loans or financial aid, though he was very glad to import technicians and teachers. From this inauspicious beginning, Japan has shown a sustained rate of economic progress more rapid than that of any other country. (The high rates of economic growth claimed by Russia, and accepted uncritically by so many American economists, collapse as soon as they are subjected to any close examination; and the true long-period rate of economic growth in the Soviet Union is substantially lower than in the United States or Western Europe.) The most interesting fact about Japan throughout this period in which population was rapidly increasing is that, contrary to what is generally supposed, the production of food from Japanese agriculture and fisheries was all the time increasing faster than population, quite apart from the food which the Japanese were able to import in exchange for their manufactured exports. This increase in food production depended upon a few simple but extremely important technical changes: the selective breeding of higher-yielding strains of rice (a very long and slow process), the use of chemical fertilizer, and the motorization of the fishing fleet. But these technical

changes could never have been so thoroughly adopted had it not been for a concomitant reform. As early as 1899, Japan established universal education. This was a most courageous decision for a country as poor as Japan was then. India is still very far from this objective, and Russia did not establish universal education until as late as 1931. Quite apart from the inherent value of education, I think that the evidence is convincing that it has been education, in the long run, which has been the principal factor in Japan's out-standing economic progress. Whether Japanese education has also been partly to blame for Japan's military adventures against her neighbours is a question which we cannot settle now.

What Japan did in the nineteenth century is something which India, whose population is now rapidly growing, can hope to do in the twentieth. There are no grounds for despair. The amount of land available per person is far higher than in Japan; science and technology are now much further advanced, and other countries, particularly the United States, have been generous with economic aid. We now have enough evidence to measure the rate of economic progress in India since 1948, and although the figures fluctuate considerably from year to year with variations in the harvest, on the average both agricultural and industrial production in India are growing substantially faster than population.

Population - The Driving Force

In all these changes, population increase has been the principal driving force. They have come about when population pressure provoked them, not earlier. Population pressure is probably the only force powerful enough to overcome the intense conservatism of peasant populations, whether they be Indian, Japanese, British or Greek. In some cases, where the pressure of population upon agricultural land is severe and little help is obtainable from outside, the process of economic growth may be painful, as it was in Britain in the late eighteenth and early nineteenth centuries. The more industrialized a country becomes, however, the greater is the economic benefit which it derives from population growth. Examination of statistics of industrial productivity, in many different countries, indicates that it is always in the industries whose market is expanding most rapidly that the greatest gains in productivity occur.

The same proposition applies in converse form, that a check to population growth has a harmful effect. If checking population were the way to enrich a country (this was the unanswerable question which the French delegate, Professor Sauvy, asked the World Population Conference in 1954) then France should be the richest country in the world, for France began family limitation about 1780. In fact two leading French economic historians, Marczewski and Combe, blame France's comparatively late start in industrialization upon the lack of population pressure (in comparison with England) in the early l9th Century.

Political Consequences

Population limitation has political consequences, too. Whether we like it or not, the countries which count most in world affairs are those with large populations - China. India, Russia, the United States. The decline in the relative importance in world affairs of Britain, France and Germany is largely due to the fact that they have limited their populations while other countries have continued to expand.

Family limitation may be, in some cases, an urgent need for the family concerned: and there are morally legitimate means by which it can be brought about. But where the need is not urgent, parents who limit their families, however morally legitimate their means are doing something to

weaken their country's political and economic future; and parents who enlarge their families are strengthening their country and civilisation.

Racialism

The hysterical frenzy with which many British and American writers are now demanding population limitation in Asia and Africa in my opinion contains a strong element (albeit perhaps unconscious) of racialism, one of the most powerful poisons in the world today. They see clearly that, at present rates of population growth, the Asian and African peoples will become politically and economically preponderant in the world; and they can not bear the prospect.

Let it be added that racial hatred of white for coloured people, organised by certain politicians for their own advantage in the United States and South Africa, is no more evil than the hatred of coloured for white, also organised for their own ends by certain other politicians.

The Providence of God

Population growth, however strange and unwelcome some of its consequences may appear at the time, must be regarded, I think, as one of the instruments of Divine Providence, which we should welcome, not oppose. Its consequences, we have seen, have in the long run been beneficial: indeed without it civilization would not have come into existence, and mankind would still have been living as primitive hunters or herdsmen. If we follow our Creator's wishes, instead of trying to oppose them, we may find that He has in preparation for the human race a much higher, more productive and scientific and more cultured civilization than any which has gone before, and moreover a civilization covering the whole world, not limited, as we have been previous civilizations, to a comparative few.