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The Commons and Property Rights: towards a synthesis of demography and ecology

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FOR MANY YEARS, there has been a running argument about the interrelationship of economic growth, population size, and human living standards. In comparatively recent times, this debate has tended to concentrate on the widespread claim that the world is already — or will soon become — overpopulated. Is this claim correct, and, if so, what can be done to reduce the threat, and by whom?

On these questions, the several contributors to this book are by no means in agreement. Two main currents of opinion may be discerned; those who believe that the problem requires positive and direct intervention by the organs of government, which would necessarily involve some kind of restrictions on the right of citizens to make their own decisions about family size; and those who believe that such intervention is unnecessary, or that it would fail to produce the desired results. People in the second group either believe that the problem has been overstated, or that there are other methods of treatment which would be less objectionable and more effective. They are disposed to think that direct intervention would not only produce objectionable interferences with personal liberty, and doubtless many unforeseen side-effects, but it would also prove counter-productive for the declared object, since it would distract attention from the real cause of the trouble.

Despite this area of disagreement, there is one very important

matter on which the contributors are in complete agreement. They all agree that any answer to the population problem must include, whatever else, some serious attention to the problem of what may conveniently be called 'the commons' — that is, those global resources which are not arrogated to particular individuals or states. At present the 'commons' include the open oceans; some of the great rivers; the air; 'space'; and a few patches of dry land, such as parts of Antarctica. Alex Hardie argues that the surviving 'commons' are divisible into what she calls 'Remnant Commons' and 'the Last Commons'. Some of the contributors consider that the 'commons' should be increased beyond their present extent; that natural and locational benefits should accrue to all, and that socially-produced benefits should accrue to the community which produced them. There is unanimity that some kind of guiding principles must be articulated as to what are, or should be, 'commons', and what sort of rights of access there should be to those 'commons'.

Malthus and George

The classic analysis from which the population debate derives is Thomas Malthus's *Essay on Population* (1798; extensively revised 1803), Malthus's argument is familiar enough. Human populations, like all natural populations, tend to increase in what used to be called 'geometrical progression' and is now usually called an exponential manner. To give data which were not available to Malthus, United Nations statistics (which will later be discussed more fully) show that the world population approximately doubled in the 36 years from 1950 and 1986, increasing from just over 2.5 thousand millions to a shade under 5 thousand millions. If human reproduction continues exponentially, then in the 36 years 1986-2022 it will grow to 10 thousand millions, by 2058 it will be 20 thousand millions, by 2094 it will be 40 thousand millions, and so on. The meaning and implications of exponential growth are discussed much more fully in Fred Harrison's article.

From what has been said already, however, it is plain that exponential growth cannot continue indefinitely. Supplies of food and other human requirements can only be increased to a finite extent. In the past, the tendency towards exponential growth has been restrained

by such factors as starvation, disease, war and infanticide. Sometimes this restraint has taken the form of a sudden and dramatic reversal of population growth. To cite some familiar examples, failure of the Irish potato crop in the late 1840s caused something like half a million people out of a population of rather more than eight millions to die of starvation and of diseases related to starvation. The 'Black Death' of the 14th Century caused the population of Europe to drop enormously; to say that it killed a quarter of the population is probably an understatement. In the Second World War, something like a quarter of the population of Poland died more or less violent deaths.

Even in Malthus's time, technological improvements were allowing considerable population increases to take place with apparent impunity. The Malthusian argument, however, was that technological and other improvements can only prove of brief benefit to the great bulk of the human race, for they merely encourage further reproduction — or, perhaps, a higher survival-rate among children — and so any benefit is soon soaked up. Small 'aristocracies' may contrive to enjoy a high level of culture as a result of the improvements; but most people will continue to live at a level of base subsistence. The only hope for escaping this gloomy prospect which the 'Malthusians' offered was that people might decide voluntarily to limit their families, in order to counter the tendency for populations to increase.

How far Malthus later qualified the doctrine to which his name has been applied is a matter for scholarly dispute. It has been powerfully argued that two anonymous articles attributed to him, which appeared in the *Edinburgh Review* of 1808 and 1809, showed that he had by that date moved a very long way from 'Malthusian' doctrine, and argued that conditions, at any rate in Ireland, could be improved greatly by the application of proposals which sound very much like a tax on land values, of the kind later advocated by the American philosopher and economist, Henry George.

George enters this book as frequently as Malthus, and it is necessary to digress for a moment to explain who and what he was. Henry George (1839-97) was an American philospher-economist, whose *magnum opus, Progress and Poverty,* which has been repeatedly reprinted, attracted enormous attention in the United States, in

Britain, and in some other countries, in the late 19th and early 20th centuries. All of the writers in this book consider that George's work has high contemporary relevance. The essence of George's argument was that land is indispensable for all human activities, and that if some people own land to the exclusion of others, all kinds of distortions and injustices will arise which affect urban and rural communities alike. The most vital measure required to conquer poverty, George argued, is to get the land system right; and he had much to say about how that should be done.

To return to Malthus, many later authors sharply criticised the original 'Malthusian' doctrine. Their argument usually turned largely, on the contention that there were enormous quantities of land (which is merely the economists' word for 'natural resources') potentially available for human use, from which people who wished to develop that land were excluded by oppressive laws. If these laws were changed, and all that land became available, then there would be an immediate increase in living standards of the poorer people, and there would be no question of a 'Malthusian' problem arising for several generations. Whether that problem would eventually recur when populations had expanded into the newly-available land, was a question belonging to a future so remote that practical economists could safely ignore it. In the present book, however, Fred Harrison has dealt with the Malthusian argument in considerable detail in the light both of modern demography and the very cogent 19th century criticisms by Henry George.

In comparatively recent years, the original debate has largely lapsed. In the developed countries of the world, there is abundant evidence that living standards of all classes, but most particularly of the poorer people, have improved enormously, and it is today taken as almost axiomatic by most people living in those countries that their personal living standards will improve greatly during the course of their lifetimes. The same thing is happening in some of the less developed countries, and many people have assumed that it is only a matter of time before it happens everywhere.

This empirical evidence seemed to establish that the Malthusian view, at least in its original form, could be largely discounted. Perhaps there was a 'Malthusian' problem in some of the poorer countries of the world; but a combination of economic reform and

the arrival of technological improvements from elsewhere would eventually cause that problem to disappear.

The Environment

Yet a new argument, not identical with the old 'Malthusian' analysis but related to it, has appeared in recent years and has secured wide acceptance. The number of human beings in the world has increased enormously in comparatively recent times. The estimated world population in 1913 was 1,810 millions.[2] By 1945 it had reached 2,326 millions, by 1980 it was 4,917 millions. Thus in the thirty-four years 1913-47 the population multiplied 1.28 fold; in the thirty-three years 1947-80 it multiplied 2.11 fold. These 'population problems' are discussed further in Fred Harrison's essay in the present book. There is every reason for thinking that the number of human beings will continue to increase rapidly for many years to come, whatever action governments, economists, religious teachers and other 'leaders' may take. It is now widely believed that these burgeoning populations will soon reach — and perhaps they have already reached — a level at which they impose an intolerable pressure on natural resources.

In all previous ages — so the argument runs — human numbers were such that the natural environment was able to provide for their needs, like food, shelter and energy, without serious damage. The fact that people frequently lacked those requirements was due to economic, political or moral defects which it lay in human power to rectify. Now there are serious signs that this self-regulating system is breaking down. Not only is the number of human mouths rapidly increasing, but the size of the 'cake' they wish to consume is being reduced, and perhaps its very existence is under threat.

At first, the main form which this argument took was the contention that man is destroying irreplaceable resources. Familiar examples are the rapidly-growing rate of extinction of animal species; the destruction of major environments like the Amazon forest; the depletion of finite resources of fossil fuels; the reduction of food resources through over-fishing. Much of this pressure has been exerted on land which in former times was considered 'marginal'. Some of the pressure on marginal land has been spontaneous, but much has been more or less directed by State authorities, or is at least

the indirect result of State land policies. This raises an important question: how far have both demographic and ecological distortions been the product of such policies?

The view that man was trenching on irreplaceable resources was to some extent countered by an appeal to man's technological resourcefulness. If people find that fossil fuels are in short supply at known locations, they will discover new places, like the North Sea, where these materials can be extracted. If all the resources of fossil fuels become exhausted or seriously depleted, then people will turn to other sources of energy, like solar power, or geothermal power, or tidal power, or nuclear power. If people cannot extract enough fish from the sea, they will either turn to other foods or breed the fish they require in special conditions.

The extinction of species may be deplorable to the lover of nature, or to the enthusiast for biological science; but mankind can 'live with' these extinctions. Indeed, Nature herself prescribes extinction:

> ... From scarpèd cliff and quarried stone
> She cries, 'A thousand types have gone;
> I care for nothing, all shall go.'

wrote Tennyson.[3] What is new, or even regrettable, about the destruction of species? That view, at least in its crude form, is fortunately a good deal less popular now than it was a few decades ago, thanks largely to the wonderful television programmes which have brought home to many people the intricacy and beauty of wild life.

What is new, indeed, about the destruction of natural habitats like woodlands and forests? The Weald of south-east England was densely wooded not many centuries ago. Today there are still patches of woodland in the Weald; but is it wholly deplorable that there are now fewer woods in the area than was once the case? Nor is the destruction of woodlands a new phenomenon; it was certainly taking place in Europe in Neolithic times, and the human race has survived the process thus far. The ecologist's answer to that sort of argument is that the rate of destruction in recent times bears no comparison with what was happening in the past.

But man is not only trenching on the environment in order to

satisfy his positive requirements. He is also producing great quantities of pollutants which impair the capacity of the wilderness to function as a self-regulating system. Chemicals deriving from industrial and agricultural processes are finding their way into the environment, and particularly into water and air, in ever-increasing quantities.

Some of these chemicals are demonstrably toxic. In a sense, these are the less dangerous effluents, for the damage they do is immediate and obvious, and people are able to make calculated decisions as to what — if anything — they propose to do about them. Sometimes people decide to pay the price of stopping the pollution. After a long series of sulphurous 'smogs', culminating in one incident in 1952 which killed several thousand Londoners, a decision was taken in Britain to ban the burning of coal from which the smog derived. On the other hand, smogs of a chemically different kind, which are produced by the burning of hydrocarbon fuels, and vex towns as far apart as Los Angeles, Tokyo and Athens, are apparently considered preferable to the alternative of greatly restricting the number of motor vehicles. Relatively minor improvements have been introduced to reduce the damage and inconvenience, but people evidently prefer cars with smog to the alternative of fewer cars and no smog.

Often, however, the damaging effects of pollutants are not established for a long time. CFCs (chlorofluorocarbons) are relatively non-toxic chemicals. They had been very widely used for many purposes, including propellants in aerosol sprays, and the freezing mechanism of refrigerators, before it was suspected that they were damaging the ozone layer. It has now been discovered that the overall effect of these chemicals has been to allow solar ultra-violet radiation to penetrate to the earth's surface in greater quantities than hitherto, and that this results in a high incidence of skin cancer, particularly among people with fair skins.

The trouble with this sort of effect is that it can only be demonstrated by the use of statistical techniques. Some people will develop skin cancer, and some will escape it, whether or not there is a 'hole in the ozone layer'. The concept of 'probability', familiar enough to the scientist or medical practitioner, is sometimes difficult to explain to people who have had no mathematical training.

To make matters even more difficult, the risk may be greatest in

places geographically remote from the place where pollutants are produced. Most CFCs are produced in the northern hemisphere, while the main damage to the ozone layer deriving from those substances appears, thus far, to have occurred in the southern hemisphere. How does one explain to an Indian whose life expectancy is very low because of poverty, and whose dusky complexion largely protects him from the risk of skin cancer, that he should cease producing CFCs which at the moment appear to be doing the greatest damage in Australia? This is even more difficult when he strongly suspects that if his own country ceases the production, others will take it up.

In other cases, the extent of pollution damage remains uncertain to this day. There is still serious argument as to whether the production of carbon dioxide from industrial processes, vehicles and domestic heating is producing global warming through what is usually called the 'greenhouse effect'[4] — and, if so, how extensive that 'greenhouse effect' is likely to be. There have been many occasions in the past where the global climate has warmed up, or cooled down. There is substantial, but not conclusive, evidence that there is today a warming process in operation; but (if this is indeed happening), how does one prove that it is the result of human activities, and not one of those spontaneous developments which have occurred repeatedly in the history of the world, and particularly during the last million years or so?

If, indeed, global warming is taking place, then some of its adverse consequences are predictable, although the likely scale is unknown. It would certainly result in some melting of polar ice-caps, and consequential flooding of low-lying areas. What the 'practical man' wants to know, but nobody can tell him, is how much melting and consequential flooding can be expected in (say) twenty, or fifty, years.

At times, prediction of any kind is impossible in the present state of knowledge. The future climate of Britain is a simple example. At present the country is rather warmer than her latitude would suggest, because of the effect of the Gulf Stream which bathes her western shores with warm water from the south. Global warming might make the British climate warmer; but it could also result in changes in the Gulf Stream which would make the British climate

cooler. It is also predictable that global warming would alter the incidence of rainfall; but it is by no means clear how particular places would be affected. Fertile land in some parts of the world would probably become desert; but in other places deserts might become fertile.

Even if it becomes possible to establish and quantify human responsibility for environmental damage — whether through the 'greenhouse effect', ozone destruction or other causes — beyond reasonable doubt, it is likely to take a long time before the necessary adjustments can be made. One aspect of the problem of CFC production control has already been considered. If that is the position with substances which are neither essential nor irreplaceable, and for which many substitutes exist, the resistance to any kind of serious interference with processes which produce carbon dioxide is bound to be very much greater.

All pointers suggest that such problems will multiply. More and more people are demanding more and more technology to satisfy their expectation of rising living standards. Some of that technology will produce damage to the environment: perhaps predictable damage, perhaps unpredictable damage. Some kinds of damage can be stopped, as the effect of London smogs was stopped when it was made illegal to burn coal in urban areas. Other kinds are probably irreversible. Even if people suddenly stopped destroying the Amazon forest, there are strong technical arguments for the view that it would be impossible for forest with its original flora and fauna to reclaim the land which has been lost. But it is proving exceedingly difficult even to protect the Amazon forest from further destruction.

As it is so difficult even to deal with problems like saving the Amazon forests from further destruction, or drastically reducing the emission of CFCs, where the forces resisting policy change would seem to be much weaker than those with an interest in continuing the damage, then how can a problem like global warming be tackled, even on the assumptions (a) that it is taking place at all, (b) that it is occurring on a serious scale, and (c) that it is largely or exclusively due to human activities? How can any government in a developed country which seeks to reduce the use of heating systems and cars expect to overcome the resistance of ordinary citizens who may or

may not understand and accept the arguments, but who find it hard to visualise life without those particular conveniences?

There is little point in multiplying examples. Nor is the essential argument affected if some of the examples here considered, or some of the other examples which are widely discussed (like the effect of methane on global warming, or the risks from nuclear waste, or the adverse consequences of acid rain on the forests of Europe, or the various damaging effects of agrochemicals), should prove to be false alarms, based on a misunderstanding of facts, or even deliberate misrepresentation by people with axes to grind. All evidence shows that problems deriving both from direct human pressure on natural resources, and from the effect of human effluent of one kind or other on the environment, are becoming increasingly numerous, increasingly intractible, and increasingly harmful in their consequences both for man and for other forms of life. Human beings are certainly trenching deeply into what Alex Hardie in her article calls 'the last commons'.

'The Commons'

The gloomy empirical evidence that man is rapidly destroying the environment which is essential for his own well-being has been reinforced by philosophical argument, set out with great clarity by the American biologist Garrett Hardin in an important paper entitled *The Tragedy of the Commons*[5], and since developed and refined in other places, including this present book. As Hardin willingly admits, it is by no means a new argument, but was advanced with a similar example as far back as 1833.[6] Hardin's argument, in its original form, runs rather like this. Imagine a large common, on which many herdsmen have the right each to graze an unlimited number of cattle. For a long time this grazing does little or no harm to the pasture, for the numbers of herdsmen, or the numbers of cattle per herdsman, or both, are kept down by various agencies such as disease or war. Then, for some reason, these agencies of control are removed, or their effect is reduced. In a fairly short time, the cattle grazing on the common reach such numbers that any additions to those numbers seriously damage the pasture.

This poses the individual herdsman with a striking dilemma. He

knows that by setting another beast to the pasture he will increase his personal wealth. He also knows that he will diminish the value of the pasture, as a result of which he, as well as the other herdsmen, will lose. However, the loss which he will make from the diminished value of the pasture will be much less than the gain he will make by grazing the extra beast. Even if he resists the temptation to increase his own wealth by such selfish behaviour, he knows that others will not show similar restraint, and the productivity of the pasture per beast will be reduced. He must therefore graze more beasts not merely in the hope of a better living, but in order to secure the same standards as he has enjoyed in the past. So every herdsman working the common will increase his herd as much as possible, even though every one of them realises that he will personally be worse off than if they had all refrained from grazing the extra cattle.

The Commons Today

Experience of the modern world emphasises the relevance of that thesis. Suppose, for the sake of argument, that the 'greenhouse' view is proved to be correct. Every factory owner, every car owner, stands to lose if the world becomes too hot as a consequence of the 'greenhouse effect'. Yet all of these people have an interest in generating their own little puffs of carbon dioxide which produce this effect. To move on to more certain ground, everyone who munches a hamburger produced from cattle which grazed on an area which was once Amazon forest stands to lose if the Amazon forest disappears; but each one calculates that his personal loss from not eating the hamburger will be greater than his personal loss from the disappearance of that tiny sliver of forest which was needed to make the hamburger. Everyone who squirts an aerosol spray containing CFC propellants is marginally more at risk of skin cancer in consequence; but he calculates that the risk will be so slight that it does not compare with the convenience of spraying paint on his car. An appeal to 'enlightened self-interest' will not stop the 'greenhouse effect', or save the Amazon forest, or preserve the ozone layer. If the various threatened natural assets are to be preserved at all, this can only be done by the 'herdsmen' getting together and somehow or other limiting their hitherto unlimited rights of 'pasture'. Hardin's 'com-

mon' is not only being overgrazed, it is being contaminated as well.

The increasingly acute character of the various problems which have been discussed derives partly from man's growing technological skill and partly from the rapidly-increasing number of human beings. It may or may not be true that — given time — the world could accommodate without mishap both the developing technology and a human population much greater than the present. Unfortunately, all evidence suggests that the necessary time will not be vouchsafed. Nobody can confidently predict what will 'give' to precipitate disaster. It could be some problem already identified. It is just as likely to be a problem of which people today are almost, or quite, unaware. It may even be something to do with the very nature of man himself, and this suggestion is raised by Robert Ornstein and Paul Ehrlich, *New World, New Mind*[7]. Will a creature whose essential physical and mental attributes are those of a late-Palaeolithic hunter/gatherer be able to go on coping with an environment which becomes rapidly more remote from the one in which he was evolved? The one thing that can be said with confidence is that if human numbers and human technology continue to develop at their present rate for more than a very few decades, some major calamity is inescapable.

So what is to be done? Do real herdsmen in the real world act in the way suggested in the original articles? Study suggests that they do not leave it to chance whether their commons will be overgrazed, but make very stringent rules which determine how many beasts each one may graze. Any one who has read — for example — English manorial records will be familiar with the disposition of commoners to insist that nobody should exceed the limits allocated to him, and their determination to punish anyone transgressing the rules. This fact may provide some important clues about possible ways in which one may treat both the technological question and the population question.

For the technological question, it is possible to state certain general principles which need to be applied, even though the practical application of those principles will prove exceedingly difficult. Few people would dispute that the organs of government have the right to control emissions into the environment, or to protect endangered species, or to establish nature reserves, although there is sometimes a good deal of argument about priorities, and about the

best ways of producing the effects desired. The problems are so acute that most people would probably be willing to accept considerable infringements to their personal liberty if these were required in order to solve them. To that point it will be necessary to return later; but it may also be necessary to curtail the authority of the nation-state itself.

The Nation-State

Many people consider that the nation-state possesses a kind of moral authority which, in the last analysis, overrides all other matters. All governments, even 'libertarian' governments, have a disposition to encourage that point of view, although it is difficult to see on what moral principle it is based. Nicolaus Tideman's chapter in the present book provides a striking example where even Henry George advances what (on one view at least) looks rather like special pleading for the 'right' of fellow-Californians to monopolise territory which they had fairly recently filched from others.

Yet it would be difficult to discover any fundamental principle which would carry conviction today on which this view of the absolute authority of the state is based. The Amazon forest is not exclusively the concern of Brazil, for its destruction will represent a great loss to the whole of mankind, and perhaps produce secular climatic changes throughout the world. It is difficult to see why Britain has any more moral title to burn minerals whose products fall as acid rain and wreck the woodlands of other countries than a private individual has to make a bonfire of rubber tyres which injures the comfort and health of his neighbor. If it is proved that CFCs, or 'greenhouse gases', produce adverse effects on a large part of the world, then ways must be found of persuading — or, in the last analysis, of compelling — recalcitrant states to conform to the general interest of the world.

The risks inherent in the idea of a nation-state's monopoly over its own resources have recently been brought out with great clarity. The ultimate origin of the Gulf War of 1991 may be summed up rather like this. Kuwait was for centuries a patch of more or less desert of little importance to anybody except its few inhabitants. Then oil was discovered. The country's rulers became fabulously rich from oil

revenues, and they had the good political sense to see that the ordinary people of Kuwait attained standards of affluence well ahead of most western countries. The Iraqi government, however, was jealous of this great wealth and seized it. The American government, with some assistance from others, sought to reverse that action, first by the brief (some might say perfunctory) use of sanctions, and then by war. The whole problem derives, in the last analysis, from the very dubious assumption that some nation-state, be it Kuwait or Iraq, has the moral title to wealth which it did not create.

Tideman brings the reader to consider closely some of the principles which underlie, or should underlie, the assumed 'rights' of governments or nations. His suggestions about Lockean notions whose application might 'solve' problems like those of Northern Ireland or the Middle East may strike the reader as naïve and difficult to apply, but the essential Tideman argument that it is vital to get back to fundamental philosophical principles is impressive. How far particular devices will work in particular cases in order to persuade governments to abandon their fatuous claims to absolute sovereighty over particular pieces of the earth, and whether these devices will produce harmful side-effects, are important questions of practical politics, but do not touch the inherent morality of the problem.

Morally, the natural resources of the world belong equally to all human beings, wherever they live. Some people would go even further, and add that they are not exclusively the right of human beings; that, in a sense, man is the trustee for all living things. The logic of all this is that there is an urgent need for everybody to start working out a system not of national but of world ownership of land resources. The surviving 'commons' are a good place to start, for — by definition — they are places in which nobody has an established interest; but eventually it will be necessary to internationalise all land everywhere.

Alex Hardie considers the problem from a different angle. She discusses the way in which law relating to 'commons' evolved in actual societies, and goes on to examine at considerable depth the principles which apply, and which should apply, to relevant aspects of international law. Unfortunately, the 'commons', so far from being extended, are being rapidly 'enclosed'. In comparatively recent years, the concept of 'territorial waters' has changed radically. The

old three-mile limit was developed essentially to secure adequate naval defence of a coastline. Today many countries assert much wider limits, essentially in order to claim minerals which lie under the Continental Shelf, and particularly hydrocarbons. There are now signs that territorial claims over oceans are being pushed much further, in order to grant monopolies for the exploitation of mineral nodules on the floor of the abyss[8].

Population: the Problem

The 'technological' question is difficult enough, and compels people to accept some very unwelcome conclusions. The 'population' question, however, is more difficult still. An argument frequently heard today runs rather like this. People have a tendency to multiply to a point where either their demands on the environment, or their effusions into the environment, produce major damage. In the past, that tendency was held back by disease, war and so on. Now people know much more about the prevention and cure of disease, while the risks associated with major war are so enormous that people are less and less inclined to accept the tolerant view of von Clausewitz that it is merely 'political action with the admixture of other means'.[9] Thus these agencies of control are ceasing to apply. The world is approaching a point where there will be so many people that the 'common' on which they rely will be gravely depleted, even though they limit the numbers of technological 'cattle' they choose to graze. If this state of affairs is to be averted, the argument seems to run, then draconian measures will be required to limit human fecundity.

In the present book, Robert V. Andelson seems to accept that view without reserve, and pushes its conclusions to their limit. Andelson is an academic philosopher, who has long been a staunch advocate of freedom in almost every sense of the word, and has been a particularly eager supporter of the libertarian economics and social philosophy of Henry George. However, as early as 1971 he took public issue with the notion that state interference with human procreation is in all cases the violation of a right.[10] Although he has never accepted the view that overpopulation is the fundamental cause of poverty, ecological concerns have led him to regard it,

nonetheless, as a compelling problem of the utmost gravity. His position in this respect has been partly shaped by Hardin, and in some ways he out-Hardins Hardin. He goes so far as to declare mandatory population control to be 'the only long-run safeguard against possible environmental doom', declaring that it 'presents a threat only to sentimental and conventional notions of rights and freedom'. Strong words indeed for a libertarian!

Andelson's assertion poses several questions, of which two come immediately to mind. First, has it been established that there are no other 'long-run certainties against environmental doom'? Second, even if that should be the case, has it been established that mandatory population control would provide that certainty? Although there is considerable argument for the view that we are advancing towards 'doom', yet it does not seem to have been proved, by Andelson or anybody else, that mandatory population control on the scale required is even possible, still less that it will provide certain escape from 'doom'.

It is necessary to look closely at the population problem from several different aspects. Those advocating population control sometimes seem to assume that human beings, left to their own devices, will produce about as many progeny as is biologically possible. In some societies, this is doubtless true. In those societies, 'May you have many sons!' is a blessing, for many sons mean many hands to till the family fields, and many children to care for the parents in their old age. People in early-Victorian Britain, echoing the Psalms, spoke of a large family as a 'quiverful' for similar reasons. Children could be put to work at an early age, and an extra pair of hands would soon bring in more money than an extra mouth consumed. But is it correct to assume that this philoprogenitive enthusiasm still operates generally in human societies?

As far as non-human species are concerned, Hardin's statement that 'in the absence of "environmental resistance", exponential reproduction is the innate result of all healthy living' is broadly correct. Mankind, however, differs from all other living organisms in two important respects. Human beings are the only creatures which understand the relationship between sexual activity and reproduction; while people living in the more developed societies are able to pursue sexual activity without reproduction supervening.

It is instructive to compare the rate of population increase in different parts of the world at different times. Again the thirty-four years 1913-47 and the thirty-three years 1947-80 are useful for the comparison.[11] In the first period, the rate of increase in most of the continents fell within the fairly narrow range of 16% (Europe) to 40% (Africa). The only exceptions were Oceania (57%) and North America (89%), both of which were relatively empty places into which large-scale immigration was taking place. The world-wide mean of 28% growth over thirty-four years was perhaps worrying for people who extrapolated those figures into the remote future, but it was not generally considered alarming; indeed, European countries tended to be more concerned about future population declines than about population increases.

The pattern in 1947-80 has been radically different, and it is clear that the relatively peaceful character of the period by comparison with the earlier one is not the principal explanation. Only in North America (22% increase) and Europe (30% increase) has the rate of population growth kept within the 'normal' 1913-47 range. Oceania has experienced 2.08-fold growth, which may be explained largely by immigration. Elsewhere, the growth has been attributable overwhelmingly to multiplication of the indigenous population, which has ranged from Asia, which has the same growth as Oceania though for very different reasons, through the 2.55-fold increase in Africa to a staggering 3.50-fold in Latin America. If the world rate of population growth had been the same in the second period as in the first, then the 1980 world population would have been a shade under 3,000 millions instead of almost 5,000 millions.

More recent figures bring out the problem even more sharply, but they also point to a possible solution. In Europe (including the USSR), and in countries like the United States, population growth is being kept within bounds. In no European country, with the trivial exceptions of Andorra and Albania, has the annual population growth for 1980-86 reached the 1.2% level of China, and in most of those countries, it was far below that figure. In a number of countries, including the United Kingdom and both sides of Germany, there has actually been a marginal decline in population. Of course, any population increase of any size at all may be a matter of concern; but the experience of Europeans and North Americans

bears little comparison with several African countries, where the annual growth rate is over 3%, and in some cases over 4%.

Nor do the strictures of the Catholic Church against contraception appear to have had a great effect on population growth. The overwhelmingly Catholic Republic of Ireland, where the views of the Church about contraception are reinforced by legislation, has had astonishingly stable numbers over a long period; 2,972 thousands in 1926; 2,961 thousands in 1951; 2,978 thousands in 1971. Perhaps the Irish tradition of emigration explains this stability to a certain extent; but no similar argument can explain the slight decline in population of mainly Catholic Hungary in 1980-86. Either Catholics in those countries ignore what their priests tell them, or they find acceptable ways of controlling natural fecundity.

The fundamental difference between what might be called the 'Atlantic' countries on one hand and the poor nations of the world on the other is the circumstances in which babies are brought into existence. On the whole, people in the Atlantic countries have children because they want the company of children, and not because the children follow as an unintended consequence of sexual activity, or because they are sought as an economic benefit for their parents. There is also a high degree of sexual equality in Atlantic countries. Women are not the passive instruments of the sexual desires, or calculations of economic interest, which come from men. Women are able, if they wish, to use contraceptive techniques of their own, without permission from, or even the knowledge of, their male partners.

None of these conditions applies in those countries where population growth is alarmingly high. Fred Harrison provides some striking illustrations of how this operates, and of its close connection with primary poverty and the land problem. Mechanical and chemical contraception are much too expensive for most people in such countries, and are sometimes unobtainable — although Alex Hardie suggests that this difficulty may occasionally be circumvented. In conditions where life is short and precarious, sexual abstinence is highly unlikely. The women are much more likely to adopt a purely passive rôle than in the Atlantic countries. Furthermore, there is often still a powerful economic interest in having a large family. It is also important to remember that there are cultural as well as

economic aspects to family size — a matter discussed in considerable detail by Fred Harrison.

In the 'advanced' countries, when living standards began to rise, the first result was a substantial population increase, because of the dramatic reduction in infant and child mortality. In the next phase, 'Atlantic values' were adopted, and the population increased much less rapidly.

At first sight, this argument seems to carry the comforting implication that the poor countries will follow the same pattern, and everything will somehow come out right in the end. Unfortunately, this conclusion is by no means certain. Hardin discusses what is known as the 'demographic transition' — that is, the change within a society from high fertility and high death-rate to low fertility and low death-rate. This certainly operated in European countries in the 19th and 20th centuries; but Hardin asks whether it is operating in the poorer countries today, and his answers are not very comforting.

For one thing, the population growth in some, at any rate, of the poor countries seems mainly attributable, not to a rise in general living standards, but to improved medical knowledge, and living standards may even have declined in certain cases. One, perhaps ambiguous, quotation in Hardin's essay suggests that in Central Africa there has been a further complication, and fertility has risen at the same time. Even if these arguments can be overcome, and the view is accepted that — given time — everything should right itself, it is by no means certain that enough time will be given; and one is reminded of Maynard Keynes's aphorism that, 'in the long run we are all dead'. Thus there is serious doubt whether the 'demographic transition' will occur at all, and even more doubt whether it will occur in time to avert 'doom'.

Hardin raises another worrying consideration. Is there a kind of inverted eugenics in operation? Are there modern societies tending to breed selectively from individuals whom, by all ordinary tests, one would regard as 'unfit'? There is a common argument in Atlantic countries that 'welfare' provisions encourage irresponsible procreation. 'Responsible' people produce no more children than they can reasonably expect to care for from their own resources of money, time and love. 'Irresponsible' people become pregnant, or make others pregnant, to produce casual sexual gratification, without

thinking much about such matters, or else anticipating that the state (i.e. the taxpayer) will provide at least the financial requirements. 'Irresponsibility' may be the result of unfortunate experiences in early life; but in some cases it may be linked to heritable, or partly heritable, characteristics like low intelligence.

Population Control

These points suggest to Hardin and Andelson that some kind of mandatory population control may be the answer. Leaving aside the fundamental question whether mandatory population control is desirable, it is worth asking whether the available evidence suggests that it would be effective.

In the past, governments have frequently attempted to control population numbers. In most cases, what they have sought was an *increase* in population, usually for reasons of a political character associated with notions of national aggrandisement. In very recent times, the disposition of governments has more commonly been to encourage, or to enforce, stability or reduction in population. But has it worked?

In the 1980s, the two most famous, and perhaps the most extreme, cases of countries which sought to restrict population growth were India and China. Yet in the period 1980-86, the latest figures available at the time of writing, the annual population growth of those two countries was 2.1% and 1.2% respectively. These figures, from countries which have positively discouraged reproduction, may be contrasted with the annual population growth rate of only 0.7% in Ceausescu's Romania — the most blatant example of a country which at that date still positively encouraged population growth, and which also interfered seriously with the liberty of the subject in order to enforce the government's population policy. Such figures are in no way conclusive, and may perhaps be interpreted in different ways, but they do not suggest that state policies in either direction produce much effect. Certainly they imply that state policies offer no prospect whatever of saving mankind from 'doom'.

We are therefore let out of the extremely difficult problem of considering the morality of mandatory population controls, and a range of almost equally difficult problems about how to apply them.

Amazon forest are not the necessary consequence of Brazil's growing population, but are

> 'directly attributable to the fact that the Amazon basin is the only part of Brazil where free or cheap land is available, and this, in turn, is attributable to the fact that nearly four-fifths of Brazil's arable acreage is covered by sprawling *latifundos*, half of which are held by speculators who produce nothing. Were the artificial scarcity of available land in the rest of Brazil corrected, as the Georgist remedy would unquestionably do, pressure on the Amazon basin would obviously cease'.

If this statement is true — and there seems every reason for thinking that in essentials it is true — then it becomes a matter of high importance and urgency that other countries should apply every possible pressure on Brazil to enforce land reform.

One must not be naïve about the meaning of the word 'Brazil' in this context. To say that 'Brazil' should be subjected to pressure is not to say that ordinary Brazilians should be pressurised. It is rather to say that the national government which functions in the interest of the tiny minority which controls the *latifundos* should be coerced into giving the vast majority of Brazilians freedom of access to land.

If this principle applies in the particularly famous example of the Amazon forest, it seems very likely that close investigation would show similar conditions applying to others of the world's commons which are currently threatened with destruction, and that similar remedies might be applied. This point is emphasised by David Richards.

So perhaps the reader is being impelled towards a view taking something from both the environmentalists and the libertarians. The environmentalists are right in pointing out the global damage which is being wrought, and the urgent need for drastic action to avert 'doom'. The libertarians, however, are right in suggesting that the best hope of doing so lies in adding to the sum of human freedom, not in detracting from it. There is little reason for thinking that measures like mandatory population control are possible in sophisticated societies, still less that they would produce much overall effect on population even if they could be applied. What does seem to offer some prospect of helping the situation, however, is allowing people to do what their governments are currently stopping them from doing. *Let* people have knowledge of contraception, and *let* them

obtain contraceptives. Much more important, *let* people have access to land like the Brazilian *latifundios*, from which at present they are held back. The present author's guess is that not many Brazilians would choose to hack down Amazon forest if they had free access to decent farmland. By all means impose whatever restrictions may seem necessary to preserve land which has ecological importance, but allow people to use the remainder, whether this suits the profits of land speculators or not.

History and Economics

Other contributors to this book cast important light on different aspects of the problem. David Richards is impressed by the idea that, in the historical development of many countries, the ancient notion of land as something *publici juris* gave way to the notion of land as something freely alienable by its occupant. Thus the occupant became an owner, and land came to be treated essentially like chattels. From this change of view about the nature of land sprang an enormous amount of subsequent misery.

From the economic side of Richards's analysis, it emerges that various attempts by governments and supernational authorities to dish out favors to apparently deserving causes, without getting down to the basic question of why everything is screwed up, are all foredoomed to costly failure. Government interference with the life of the citizen is frequently counter-productive, and has even more frequently generated unintended side-effects which are as bad as the original disease. Any attempt to deal with the present plundering of the world's 'commons' without understanding the conditions precedent which made it possible for people to plunder them, is likely to prove unavailing.

This is an exceedingly important message, and it is one which is very widely ignored today, not least by people with impeccable academic credentials. It is very tempting to take some particular phenomenon in isolation, and bend every effort towards dealing with that phenomenon, without understanding the wider context into which it fits. In the comparatively recent past, very disparate kinds of social and economic phenomena have been selected for special treatment; unemployment, inflation, communism, 'urban sprawl',

militarism in particular countries ... the list is endless. These attempts to give special treatment without considering the wider context have, without exception, either failed to achieve the object desired, or else have generated other and unforeseen dislocations elsewhere. There is not the slightest reason for believing that an attempt to deal with the 'population problem' or the 'environmental problem' in isolation will prove one whit more successful.

The Land Problem

Both of these problems are related at their roots to the land problem. The expression 'land problem' is here used in its widest possible sense, to mean the whole question who should be allowed to use any kind of natural resources anywhere, and on what terms. Whether certain habitats should be protected from human activity is an aspect of the land problem. Whether sanctions should be applied to prevent people hunting endangered species to extinction is an aspect of the land problem. Whether limits should be set on emissions of carbon dioxide into the atmosphere, or the production of chemicals which endanger the environment, is an aspect of the land problem. The answers which people give to such questions are likely to depend on the views they hold about the nature of land. If they see land as something over which a particular landowner has absolute moral rights they will give one kind of answer; if they see land as something which belongs morally to the whole of mankind, they will give a different kind of answer.

The population problem is also related to the land problem, although the association is more indirect. The connecting link for the purposes of the present study is poverty. Few, if any, relatively rich societies are today increasing at a rate which poses a serious global threat for the foreseeable future. Their technology may be a threat to the earth; their population increase is not. By contrast, the very poor societies are mostly increasing at a rate which does pose a global threat. It is difficult to escape the conclusion that rapid increases in population in modern societies are promoted by poverty, and frequently generate further poverty as a result.

The root of poverty, most particularly in those societies whose population is increasing so rapidly, is land — or rather landlessness.

The *latifundos* which are the primary cause of the poverty of so many Brazilians, are not unique. In most, if not all, of those countries where poverty and population growth are most acute, essentially similar conditions obtain. The great bulk of the population is excluded from access to land: not because that land is of ecological or aesthetic importance, but because it suits the landowner that other people should be so excluded.

Thus the problems of environmental damage and overpopulation alike are seen to be aspects of the land problem. All authors in this book agree that it is essential to articulate a 'theory of the commons' which would form a guide to part, at least, of any solution to the population problem. It is surely significant that Hardin, who played a major part in originating the modern debate, wrote originally about the 'Tragedy of the Commons', but in the present book prefers to discuss 'The Tragedy of the *Unmanaged* Commons'.

The present work is not designed to develop to the full the question how the 'commons' should be managed, but to lay down certain guiding principles which may help towards such a solution. Because no human being has made land, no person and no nation has a better title to land than any other; but those who have made improvements to land have a right to the value of the improvements which they have made. The community may justly impose whatever restrictions seem fit as to the use of land; and it is a matter of the highest urgency that it should consider what restrictions are now necessary for saving irreplaceable species, habitats and other resources, and for preserving the earth from further irreparable damage. As several authors acknowledge, the 'community' which does this must be something much more than the nation-state. All authors recognise an essential difference not of degree but of kind between the 'commons' which no human being has made, and to which no human being has a better title than any other, and those products of human effort which belong by right to the person who exerted that effort. Land reform based on such principles does not provide a guarantee of escape from 'doom', but it is an essential precondition for escape.

NOTES

1 M. A. MacDowell, 'Malthus and George on the Irish Question', *American Journal of Economics and Sociology*, vol. 36, no. 4 (Oct 1977), pp. 401-416.
2 These and other population figures in this essay are based on statistics in the League of Nations Statistical Year Book 1926, and the United Nations Statistical Year Books, especially 1948 and 1985-86.
3 *In Memoriam,* canto LVI.
4 For an interesting presentation of the 'alternative view' that the 'greenhouse effect' is, at best, unproved, see program transcript, *The Greenhouse Conspiracy,* London &c: Channel 4 Television, 1990.
5 Garrett Hardin, 'The Tragedy of the Commons', *Science,* vol. 162 (1968), pp. 1243-1248.
6 William Forster Lloyd, *Two lectures on the checks to population,* 1833; New York: Augustus M. Kelley, 1968.
7 Robert Ornstein and Paul Ehrlich, *New World, New Mind*, London: Methuen, 1989.
8 See, for example, *Financial Times*, 24.x.1985, 25.iv.1986; *Observer*, 8.i.1989, etc.
9 '... politischen Verkehrs mit Einmischung anderer Mittel.' Karl von Clausewitz, *Vom Kriege,* 1952 edn., p. 888, cited in *The Concise Oxford Dictionary of Quotations* (1964, second edn., Oxford &c, 1990).
10 R. V. Andelson, *Imputed Rights: An Essay in Christian Social Theory,* Athens, Ga.; University of Georgia Press, 1971, pp. 112-113.
11 See also Note 2. To make figures easily comparable, 'Europe' includes the Russian Empire/Soviet Union, and 'North America' excludes Mexico and places south thereof, which are included in 'Latin America'.
12 R. V. Andelson, *Commons Without Tragedy* p. 32, and the article there cited, 'Brazil's land reform is caught in a violent cross-fire', *Christian Science Monitor*, 7.v.1987, p. 11. See also his forthcoming book (with J. M. Dawsey), *From Wasteland to Promised Land: Liberation Theology for a Post-Marxist World,* London and Maryknoll, N.Y.: Shepheard-Walwyn and Orbis, in press, chapter 8.