

# QUALITY OF LIFE

## CHAPTER 1

### INTRODUCTION

#### 1.1

The quality of life means different things to different people. To the hungry, the homeless, the illiterate or the sick, it means above all food, a house, a teacher or a doctor; and to the artist or the religious it means something very different again. But in recent years the quality of life has come to have a special meaning in discussion - namely, those aspects of life contributing to happiness and well-being that are threatened by population and economic growth. Scientists and others have expressed increasing alarm about the possibility that this growth will lead in the not-very-distant future to exhaustion of natural resources and to deterioration of the environment. They fear that there will be shortages of food, energy and materials; that air, water and soil will be polluted; that towns will be congested and the countryside spoilt; and that the result will be mental and physical sickness of individuals and social and national conflict. It is with this more recent meaning - that is with the threats to quality of life presented by population and economic growth - that this essay is concerned.

#### 1.2

Such threats are obviously difficult to meet because they spring from the most fundamental, and therefore difficult-to-change, human activities. The impulse towards propagation is one of the most deep-seated of all impulses and so is the urge to maximise material satisfaction. For most people, having children and making the best possible living are the main activities in life and if it is necessary to question these in order to solve any problems to which they may have given rise, this is equivalent to questioning life itself.

#### 1.3

The problems are also difficult because realisation of their seriousness is something comparatively recent. It is true that from the early Chinese and Greek civilisations onwards there have been writers who have expressed concern about population growth and damage to the environment. But until recently such writers were few and, as new methods of exploiting natural resources were developed by science and technology, the fears of a few pessimists were easy to brush aside. But the last quarter century has seen an unparalleled increase on the one hand in the world's population and use of resources and, on the other, in knowledge. There are no longer attractive new lands to settle or easy resources to exploit. At the same time there is a new and deeper understanding by biologists and others of the implications of continued growth, and growing doubts on the part of technologists and scientists about their continued ability to meet the continued increase in demand. With the

spread of communications, and increasing interdependence of countries, the world has become much smaller and its resources more limited and fragile and so, very suddenly, mankind has been confronted with a need to consider its long-term viability and the adequacy of its basic beliefs.

Just because they present a challenge to existing moral and political teachings, time makes it very hard to put forward acceptable solutions to the problems. All moral and political teachings take time to hammer out to give instruction in them and to popularise them. Once they have been established, there are strong forces to maintain them even though the circumstances that first made them appropriate may have disappeared. Thus the basic attitudes of the great religious systems to birth, marriage and death were formed around two thousand years ago when populations were small and largely pastoral and teachings that promoted the maximum growth in the numbers of the faithful. The teachings and the organisation of the great churches are continuously changing but they have an internal logic that severely limits the extent and the speed at which they can change. Similarly, what is still accepted as progressive liberal and socialist thinking, stems back to conditions in Europe a century or two ago when it was appropriate to raise the banners of freedom and equality to organise the middle classes against the aristocracy and the workers against the capitalists and to advocate policies for raising living standards that led to the most rapid possible economic growth. Like the churches the political parties change their policies but they cannot alter drastically and rapidly the basic thinking on which their popular support has been slowly and with great effort built up. If now there is a need to limit both population growth and economic growth, existing religious and political institutions are confronted with a fundamental challenge. How can they react to this challenge in a way that will both meet the needs of the new situation and, at the same time, retain those parts of their teachings that are still of continuing significance?

Again, the problems now seen to be presented by population and economic growth are difficult because their solution requires a degree of international cooperation that, in the light of achievement in this direction so far, is utopian in the change in deep-seated racial and national loyalties that it requires.

Finally, there is the difficulty that the kind of problems arising from population and economic growth tend to be long-term and indirect rather than obvious and immediate, and there is a natural tendency for people to be disinclined to make immediate sacrifices (particularly where they involve limitation of sexual and maternal instincts and the desire for higher material standards) for the sake of benefits which, being long-term, are necessarily uncertain and which may indeed only accrue to other people. It may be objected that the oil restrictions that followed the 1973 Arab-Israeli war were obvious and immediate enough and were due not only to that conflict but to the growing realisation by many oil producing states that the fast growth in world economic activity was based on

consumption of their oil and would soon strip them of their main natural asset. The vulnerability of oil reserves, however, had long been realised by those who had studied these matters and this had not prevented the fast increase in its consumption taking place. Moreover, although the restrictions and price increases are spurring Governments to speed up the development of new sources of energy, a main concern of Governments is to try to get the old increase in consumption renewed as soon as possible, in order to meet immediate rather than long-term needs.

Despite all these difficulties this essay is concerned with the long-term problems for quality of life that sound strategy for the year 2000 should seek to solve. It is right that these difficulties should be faced because half of the people now alive and the children and grandchildren of the other half will have to cope with the problems of the year 2000. The very least we should do is to consider what efforts are required to safeguard their future.

Consideration can well start with a survey of the nature and extent of the threats to quality of life that are presented as population and economic activities grow in a limited natural environment. It will be mainly dependent on the extent that these are found to be serious that there will be justification for tackling the formidable difficulties involved in controlling growth, but there are also other threats arising not so much from the limitations of natural resources as of human nature to be considered. Having assessed these various kinds of threats a look may be taken at the adequacy of existing religious and political philosophies for dealing with them. The way will then be open for a review of the main ingredients of quality of life, of the questions that arise in connection with their long-term preservation and of the answers that political leadership should give.

## CHAPTER 2

### THE LIMITATIONS OF NATURAL RESOURCES

How serious are the threats to long-term quality of life that arise either directly from our own growth in Britain or more indirectly as the result of the growth in other countries? Are the recent prophets of ecological disaster justified in foreseeing imminent doom?

British growth rates are much slower than those of the rest of the world. Our population is growing at less than half per cent a year and it is currently estimated (the estimates constantly change in the light of new information) that it will increase by about a tenth or about 5 million by the end of the century. The population of the world as a whole is growing at about two per cent a year, which means an increase of about 3,000 million or not far short of a doubling of the existing population by the end of the century. The growth in economic activity is proceeding a good deal faster than that in population, but again much slower in Britain than elsewhere. We have been converting raw materials to goods for consumption and releasing waste products into the environment at a rate which in recent years has been increasing by about two per cent a year. If continued, this would mean rather less than a doubling by the end of the century. For the world as a whole on the other hand the corresponding figures are an increase of the order of five per cent a year, which if continued, implies a quadrupling by the year 2000. To make the significance of these figures clearer it may be noted that continuation of the present rate of growth of world population would mean that the actual numbers being added to the world's population in a single year would be about 130 million by the beginning of the next century and that by the time children already born are in their sixties - it would be about 250 millions. The last figure means that in one year it would be necessary to provide for new arrivals equal in number to the present total population of North America. Projection of existing rates of economic growth yield even more dramatic figures. Take for instance a raw material that is currently being consumed at the rate of 100 million tons a year. If this figure is projected on a growth rate of five per cent a year, by the time children recently born have reached their sixties the annual rate of consumption would be 2000 million tons a year, and this figure would itself be growing each year at a rate which would involve the finding of additional supplies equal to the present total rate of consumption.

These projections are not, of course, forecasts of what will happen. They are no more than arithmetical projections of recent rates of growth based on rates that characterised a particular and, therefore, unique period of time. Rates of economic growth can change markedly from year to year and even rates of population growth can alter appreciably. But satisfaction of present popular expectations of continued improvement in material quality of life and retention of

present freedoms to reproduce does imply the continuation of growth at something like the rates that have been projected if not indeed faster ones and so it is reasonable to consider what difficulties may be expected in realising them.

It may be questioned whether these rates of growth are unrealistic because the desires for increased consumption per head of population may have been satiated by the end of the period we have been considering. This, however, seems unlikely. The growth rates just taken imply that average world consumption per head of population, will not be quadrupled until well into the next century and even quadrupling will be far from sufficient to bring the world average up to existing American standards. And there is of course no reason for thinking that the latter have produced satiation in the United States. On the contrary, the American experience suggests that there is no limit to human hankering after higher-quality foods, housing, clothing, entertainment, fast travel, or to the desire to achieve the higher standards enjoyed by the richer members of society.

But though continued growth be desired it cannot necessarily be had. Growth, or indeed maintenance of the existing population at its present standard of living, needs certain essential resources - those of energy, minerals, soil, water, air and land. No less essential are forms of organization that can secure the necessary investment in capital, provide the required technological ability and maintain peaceful, social and international conditions. These requirements may be briefly reviewed in turn.

### Energy

The size of population and standards of living depend intimately on the availability of sufficient energy to provide heat and power. Some of the biggest populations of the world are located in areas that are too cold or wet for them to live unless their homes and work places can be heated. Food supplies and transport are largely dependent on oil, and industrial raw materials are extracted, processed and distributed with the use of vast amounts of this or one of the other forms of primary fuel. Both the differences in standards of living between countries and the increases in standards within every country are all closely related to the use of energy from coal, oil, natural gas, hydro-electricity and nuclear power. Accordingly it must be expected that the continued growth of world population and the continued improvement of standards of living will be crucially dependent on the growth in supplies of energy from these or from new sources.

Anxiety about the availability of fuel has long been felt. It was felt in Elizabethan times when it was realized that the country's supplies of timber were being rapidly exhausted and it was very forcibly expressed by Jevons when he realized that the rich coalfields that were the foundation of Victorian prosperity

were being rapidly worked out. It is a similar anxiety that is being felt today as the public comes to appreciate that the highest quality fossil fuels, namely, oil and natural gas are also approaching exhaustion. The potential for hydroelectric generation is limited, and the supplies of coal and fissionable fuel and sources such as tar sands and oil shales although they are considerably greater than those of oil, natural gas and hydro electricity are also finite.

Is it possible to see new sources opening up in the future in the same way that new sources have opened up in the past? There is a good prospect that the breeder reactor will prove successful and this will multiply the length of life of the world's resources of fissionable material by a large factor. There is also the possibility that fusion processes will become practicable in which case unlimited supplies of water will be available as a necessary raw material and there will also be a substantial reduction in the amount of radioactive waste compared with the present fission processes. With unlimited supplies of electricity from the fusion process it will be possible to produce hydrogen and other chemicals to take the place of liquid and gaseous fuels for use in transport. There are also major possibilities in using solar energy. The amount of energy which the earth receives every day by direct radiation from the sun is enormously greater than the amount of energy that is needed, and there are possibilities of developing new methods for harnessing this source of energy. It cannot, therefore, be said that it will be impossible to maintain the growth in fuel supplies for a very long time to come.

But there are some dark clouds hanging over this apparently assuring prospect. One of these is the major investment required. The history of the energy industries has been one of movement towards ever more technologically advanced and capital intensive processes. The use of timber required little capital though a lot of labour. The early coal mines required more capital. Subsequent coal mines involved a great deal of investment. The development of the oil fields and the movement of the oil by pipeline and tanker and its refining, represented a further step in the same direction. We have by today reached the point where a single new unit of investment such as a nuclear power station, an off-shore oil field or a coal/oil/gas complex requires the expenditure of over a hundred million pounds. Any optimism about the prospects for energy supplies is therefore conditional upon our having economic and political systems which will ensure that these large sums of money and the large corps of highly trained engineers and scientists that are also required will be forthcoming.

Another cloud represents the difficulties attaching to the transition from one source of energy to another. Oil and natural gas are high quality fuels, now available at comparatively low cost, and despite significant discoveries elsewhere two-thirds of the known reserves of them are in the area of the Persian Gulf. The supplies from the new offshore oil fields from oil shales and

tar sands from coal/oil complexes or from nuclear/chemical complexes are unlikely to increase fast enough and be at a low enough cost to offset the exhaustion of these reserves with the result that there will be continuing tension between the Middle Eastern producers and the consuming countries of America, Europe and Japan, with shortages, rises in prices and political tension. Moreover, all countries will not be equally well placed technically and financially to replace the oil and natural gas supplies with the new sources of energy and new divisions between the haves and the have-nots will appear.

The third cloud represents waste disposal. The mine wastes, oil spillages, releases of soot, ash and oxides of nitrogen and sulphur and heating of rivers by cooling water through the use of the conventional fossil fuels constitute the biggest of all causes of air, water and land pollution. The offshore oil fields, the oil shale refineries and coal/oil complexes will present bigger hazards. But the hazard presented by nuclear power will be deadlier still. The evolution of life on earth was only made possible by the development of the atmosphere which screened the surface of the earth from the sun's radiation, and what we are now planning is to install large potential sources of radiation close to centres of population. The most rigorous safety precautions and political and social stability will be needed if the resulting threat is to be avoided.

### Minerals

Similar considerations apply to minerals generally as to the fossil fuels. The former are of vital importance for maintaining material standards of living, the reserves of them are unevenly distributed in the earth's crust and some of them are likely to be in short supply by the end of this century. Gold, silver, platinum and gem stones are so precious that they provide backing for international currencies; iron, nickel, manganese, chromium, cobalt, tungsten, etc. are essential for the steel industry; aluminium and titanium are the light metals on which the aircraft industry and some other industries are extremely dependent; cadmium, silica, germanium, selenium, etc. are required by the electronics industry; the older major metals - copper, tin, lead and zinc have special properties that give them a wide range of industrial uses and calcium phosphate, potash, sulphur, boron, barytes, etc. are basic for the chemical industry and for the production of cement and of fertilisers. Some of these, for instance calcium, iron and aluminium, are widely distributed and in ample supply. But many of them are of highly localised occurrence and are already in short supply. For example, the limited supplies of copper come mainly from Chile, Peru, Zambia and Zaire, those of tin from Malaysia, Thailand and Bolivia, those of lead from Australia Mexico and Peru and those of cobalt and nickel from Cuba, New Caledonia and a small number of other places. Even as rich a country as the United States is dependent on imports of many of these minerals: of the thirteen basic raw materials required by a modern economy, the United States was already at the beginning of the present decade, dependent

on imports for over half its requirements and by 1985 it has been estimated that it will be primarily dependent on imports for nine of them, including the three basic ones of iron ore, bauxite and tin. In the case of Britain dependence on imported minerals is much greater.

As in the case of energy it cannot, however, be said that shortages of essential minerals will inevitably set a limit to economic growth. As reserves of particular ores are exhausted, price rises will give incentives to recover more waste or scrap, to turn to leaner and more inaccessible ores (for instance to the manganese nodules that lie on parts of the ocean floor) and to substitute one mineral for another. Given time and money, such adjustments could well enable shortages caused by population and economic growth to be overcome - for instance aluminium and ceramics could replace a wide range of metals, minerals extracted from sea water could take the place of many minerals that are at present rock-mined for the chemical industry, and the chemical industry itself could produce a wide range of new artificial carbon molecules to substitute for other materials in short supply.

But the qualification about time and money is important. The same clouds hang over the mineral, as over the fuel, prospect. The use of leaner or more inaccessible ores or recourse to substitutes will normally involve a greater use of resources, including greater use of energy. The resulting extra costs will be at the expense of real living standards and may also involve a bigger waste-disposal and pollution problem. More important still, they will depend on there being enough social and political stability to permit the necessary large new investment projects to be brought to fruition. The biggest danger is that these conditions will not be achieved. Countries producing key minerals (many of them underdeveloped and unstable) may suddenly impose big price increases or supply cuts as the result of internal troubles or policies deliberately aimed at spinning out the life of their limited assets or maximising their foreign exchange earnings. The suppliers of copper and those of bauxite for instance appear to be wishing to emulate the organisation of oil exporting countries. The economies of consuming countries like Britain can be expected to be the more liable to disruption the faster their rise in demand for key minerals.

### Soil

The significance of the soil has been apparent since early man noted the difference between desert and oasis or between hill-top and valley-bottom. It is all the more apparent today when the soil is realised to be the medium by which living tissues obtain the minerals they need from the rocks, and in which take place key chemical conversion and reconversion processes and vital inter-related biological cycles of growth, decay and new growth. Soil is one of the essential bases on which rests the entire biotic pyramid of micro-organisms plants and animals. Man is at the apex of this pyramid, and his adequate



nutrition and good health largely depends on the quantity and quality of this particular resource. This resource is very vulnerable to population and economic growth. Reserves of soil are reduced by the spread of urban areas and the associated needs for reservoirs, communication systems, waste disposal facilities and amenities. The quality of the soil is reduced because pollutants released into the air or rivers find their way into it and there is seepage into it from dumps of domestic and industrial waste and from intensive livestock units. Its quality is also reduced by the use of chemicals as fertilisers and pesticides, by the use of heavy farm machinery and the specialisation of crops. All of these are increasing rapidly as the agricultural industries of the world seek higher yields and try to maintain profitability. Farmers, like others, tend to be mainly concerned with short-term benefits and so the long-term ill-effects of farm practices on the soil tend to be ignored. The complex processes that go on in the soil and their direct and indirect implications for human health are only imperfectly understood but that there are grave long-term dangers is undoubted as numberless cases of soil erosion, reduced yields and animal morbidity and mortality have shown.

There are technical and scientific measures which could enable most of these dangers to be avoided in theory. The reduction in quantity could be offset by more intensified use of the remaining soil and by the use of soil artificial rooting media and water containing the necessary chemicals. The reduction in quality could be met by altering farming systems and by more careful control of waste disposal. But the biochemical processes that take place in the soil and are involved in food production are more complex than the physical and chemical processes involved in the development of new sources of energy or the production of most raw materials and there are therefore particular risks involved in increasing interference with this part of nature. Moreover, it is not only scientific knowledge and technical know-how that is needed: countries possessing the most advanced knowledge have often signally failed to apply it. There must be suitable economic and social systems to ensure that the knowledge and know-how are applied and this means appropriate pricing systems, planning and legal controls and systems of supervision and inspection. The danger is that population and economic pressures for maximisation of output per acre will be too great to make it politically possible to give priority to soil conservation.

### Water

Household consumption of water rises as population grows, and because the industrial processes involved need very large amounts of water it rises particularly rapidly as standards of living increase. At the same time the growth of household and industrial wastes threaten the quality of supplies by injecting harmful bacteria such as those causing intestinal diseases, inorganic poisons like cyanide, mercury and lead, and organic wastes such as those from sewage

works, pulp and paper-making industries which reduce the dissolved oxygen content in water and kill off aquatic life. Moreover, a very large and rapidly growing number of new chemicals get into the water system through the use of fertilisers, pesticides, herbicides, industrial chemicals and drugs, and there is still much ignorance about the long-term effects of these on essential biological defences. The heating of water by industrial effluent and power station discharges can also have profoundly disturbing effects on life systems.

So far these threats have been combatted with remarkable success. It has been possible to find additional supplies by reservoir construction and by tapping underground reserves. The quality of water has been improved by carefully separating water supplies from sewage and by cleaning the former and treating the latter. A great deal of the reduction in mortality during the last two hundred years was achieved by eliminating water borne diseases such as typhoid, cholera and gastro-enteritis in these ways. Continued progress on the same lines can be expected.

Britain is well blessed compared with many parts of the world but there are limits to the additional quantities that can be secured, except by expensive methods such as the distillation of sea water, the long-distance piping of supplies and the treatment and re-use of wastes. As requirements increase there will need to be more re-cycling of supplies, and more expensive treatment plants and there will remain the risk that these plants will not be able to remove all forms of pollution. Satisfactory water and sewage systems require the establishment of co-ordinated control over entire river basins, very large increasingly large investments and a high level of technological ability. Their operation also requires reliable supplies of power. As the history of many civilizations has shown, all these conditions can be met only if social and political conditions are stable.

As population and economic growth continues, growing problems must be expected to arise from pollution of the sea. This has been regarded as a safe final sink for all kinds of waste products but, as the volume and toxicity of the latter increase, this assumption becomes less and less viable. An example is the 'Dead Sea' about ten miles off the New York shoreline. This was thought to be a safe location for the sewage of more than 13 million people and the dredgings from highly polluted harbours. It avoided the air pollution created by incineration or the threat to fresh-water supplies presented by landfill disposal. Accordingly millions of tons a year of sewage and dredgings have been dumped there for four decades. But the wastes have not been dispersed by ocean currents nor neutralised by salt water and they have now accumulated over a large area of the ocean floor with a poisonous mass which contains big counts of faecal, coliform bacteria, the viruses of hepatitis encephalitis; and possibly polio and substantial concentrations of toxic heavy metals. This mass appears to be moving back towards the shore line and there is danger of the bacteria

and viruses being transferred to people when the sewage arrives on the beaches or as the organisms become airborne on particles of water vapour and there is risk of the toxic heavy metals entering the food chain through fish and crustacea. Near our own shores there are signs of serious pollution in tidal reaches and even in the North and Irish Seas and there is risk of more pollution as growing amounts of waste are discharged and as oil fields on the continental shelf are developed.

### Air

Because men need to breathe about ten times as much air as the weight of food they eat and the lung is a sensitive organ it is not surprising that the importance of the quality of air has been a matter of concern in Britain at least since Elizabethan times. Polluted air threatens more than loss of amenity it can damage buildings and equipment; it can slow down plant growth and harm insect and animal life and it can cause respiratory diseases and poison the human frame. Moreover, while air pollution is most acute in industrial areas, it is not confined to such areas: air, like water, is part of a closed world system so that pollution created in one part of the world may affect far away areas irrespective of international boundaries. And because the air, water and soil systems are inter-connected, pollution may be transferred from one of these systems to the others. The greater part of air pollution is caused by the combustion of fuel in power stations, industrial plants, private homes and in cars, ships and airplanes. Fuel combustion and industrial processes release oxides of carbon, sulphur and nitrogen, and poisons like mercury, lead, asbestos and radioactive materials.

Technology can eliminate the most obvious and noxious forms of pollution. As has been demonstrated since the Second World War in this country smoke can be largely eliminated by prohibiting the burning of raw fuel. Again, chemical effluents can be reduced by such methods as extracting sulphur from fuels before they are used, by not adding lead to petrol, by improving systems of combustion, by extracting harmful chemicals from exhaust gases and by otherwise altering industrial processes. Fines and charges on effluents, prohibition of certain types of engines and processes and rigorous inspection systems can be used as means of bringing about these improvements.

But while there are no insuperable technological problems to overcome, there are substantial costs to be met - costs that involve the use of resources which could otherwise have been used to produce more goods and services for consumption. There is also a need for more social and public control over the freedom of action of individual producers and consumers. These requirements can only be met if there is sufficient public support for clean air and the main long-term risk is that under the pressures of population and economic growth this support may not be adequate.

## Land Surface

The land surface is one of the most finite of resources and, as population grows, there is an increase in density that brings with it some serious problems. It is true that it is possible to extend the surface area of the land by such means as the Dutch have long used and that technology can also extend the carrying capacity of the land surface by more intensive systems of cropping, and mineral extraction, by sky-scraper development, and by heating and air-conditioning buildings so that climatic restraints are overcome. It is also true that an increase in density of population in some areas may be desirable for the sake of necessary economic and cultural growth. But the limits to the usable land surface are not far from being reached and the dangers that increasing density of population brings in its train are apparent. These dangers are to be seen in the world's large urban areas where the quality of life of the occupants is being reduced by shortage of accommodation longer travelling times, reduced access to the countryside, overcrowding, and greater strain on the individual. The dangers are also to be seen in the countryside which is being reduced in extent and accessibility by the spread of urban areas and their associated road and rail systems, airports, reservoirs, sewage and refuse-disposal installations, mines and quarries, and which is being reduced in quality (particularly with respect to solitude, scenery and wildlife) by more intensive farming and by the growth of leisure pursuits.

These dangers are apparent in most countries of the world including even the more recently settled countries of America, but they are particularly significant in Britain where the density of population is high. Already one acre out of every nine in England and Wales is in urban use and, as the result of population and economic growth, the urban area is increasing at an average rate of about one per cent a year. Moreover, despite the efforts that have been made to disperse and decentralise industrial development, this rate is a good deal faster around the large cities and in the Midlands and South-East. The machinery for town and country planning in Britain is the envy of many other countries but it can only mitigate the ill-effects of continued population expansion on a limited land surface. Although, even in this densely populated country, the limited land surface cannot be said to impose an early limit to growth, the big centres of population are well past the point where the collective happiness of the inhabitants is being increased by further growth in their numbers. It is not necessary to have multi-million concentrations of people in order to enjoy economic prosperity and cultural richness. The cultural achievements of the Athens of Pericles and the Italian states of the Renaissance did not need populations a tenth of the size of our modern large cities to sustain them. Many present-day small University towns enjoy a richer, cultural life than far larger towns. Industrial establishments employing no more than hundreds of people can be as, if not more, efficient as those employing as many thousands and,

with modern systems of communication, it is not essential to have large numbers of industrial establishments concentrated together in order to have a growing output of goods and services.

In theory it would seem possible to re-develop city areas fast enough and in a sufficiently radical way to off-set the environmental deterioration resulting from increased size and there have been many fine plans prepared for cities like London on that basis. But those plans have not been realised: land values, rents, and compensation costs have been too high and demands for accommodation and the resulting opportunities for making profits have been too great for the plans to be economically and politically viable. It would seem that the size and rate of growth of its population has a highly geared effect on the possibilities of improving land-use and architectural quality in a built-up area. For a small, slow-growing, population a high-quality urban environment is achievable but for a large, fast-growing one - in cities like New York, Tokyo and London - it is not. If so, improvement of the physical environment in the large cities requires that the growth in their populations should be stopped and, if possible, reversed. Because the cities contain such a large proportion of the total population of Britain, this means reducing the size of the total.

#### Other essential natural resources

In theory energy, minerals, air, water, soil and land surface are the only natural resources that are essential to sustain growth - with them it is possible to provide all the material requirements of life including food clothing shelter and all the equipment and appliances that enter into civilised living. (It is assumed that the sun at least continues to shine and that it is not necessary to discuss the cosmological prospects). But use and adaptation of the basic natural resources to meet particular shortages can take time. In particular it would take time and heavy investment to make good shortages of timber and farm crops. Oil and natural gas can be used to replace timber, natural fibres and even food but if the former are in short supply as well and have to be replaced by coal, oil, shale or nuclear-based chemical plants, the time lags could be awkward. The historical experiences of shortages of agriculture, forestry and fishery products do not augur well for the future. Britain is at risk both directly and indirectly. The direct risk arises because of our dependence on imports of food and even more dependent on other natural products such as vegetable fibres, edible oils and timber. In the case of the last-named, even if every acre of non-urban land were transferred to forestry it would still not be possible to do without substantial imports of timber and in any case no crash programme could produce early results because trees take at least forty years to mature. The indirect risk arises because shortages of food in other countries could seriously affect their products of energy, raw materials, etc. on which we are vitally dependent.

That these risks are great has become apparent from the famines and undernourishment that have continued to afflict more than half of the world's population despite the great increase in economic activity over the last two decades, and it has been strikingly demonstrated by the shortages and rocketing price rises of the last two years and the actions taken by important exporting countries. Just as exportable surpluses of fossil fuels and other minerals are available only from a relatively small number of sources the same is true of farm, forestry and fishery products. Thus North America dominates world exportable supplies of food and feed-grains even more completely than the Middle East dominates those of oil. Peru dominates the world fishmeal trade and exportable supplies of all proteins are of very limited origin. In this field as in others national governments tend to act in their own short-term interest. Thus for a time in 1973 the United States imposed restrictions (on its soya bean exports which are a vital protein for poultry feed) and it has indicated that it cannot afford to carry large stocks of grain to offset fluctuation in world supply and demand. Some of the most developed and civilised nations are still engaged in intensive fishing which is running down fish stocks and leaving all of them worse off than if they cooperated to preserve these stocks. Argentine, Brazil and India have taken advantage of the global scarcity of animal hides to restrict or ban exports and are seeking to further the development of their own leather goods industries. Coffee exporters are beginning to bargain as a group to improve their negotiating position and over the whole field of food crops - as of fuel and mineral supplies. There is a disturbing tendency for countries to limit exports in order to cope better with their problems of internal inflation and to increase their foreign exchange earnings. As world population continues to grow and expectations of rising standards of living remain unfulfilled, the years ahead are likely to see a continuation of such tendencies with corresponding risks not only to the quality of life in Britain, but to world peace.

## CHAPTER 3

### HUMAN THREATS

The brief survey just made shows that some of the natural resources required to sustain a growing population and to enhance material quality of life over the next few decades are limited and vulnerable. There may be technological fixes which would avoid the resulting constraints. But here there are threats of a different kind - threats coming not so much from the limitations of nature as from those of man himself from the enemy right inside him. Successful use of technology to offset the exhaustion of some natural resources and prevent the deterioration in quality of others turns on the possibilities of making major investments, and there may not be enough time and money for these to be fully effective. It is also necessary to maintain the flow of international trade. Both of these requirements are dependent upon stability within, and peace between, countries. Stability and peace are also needed for their own sake as part of the quality of life; and other ingredients are health and education. Inability to meet these requirements constitute a threat to the material quality of life come from the human, rather than the natural resources, side and the nature of some of these threats may now be considered.

#### Investment

Shortages of natural resources and increased pollution can be overcome only by investment, and the rate of growth of this needs to be faster than that of the output of goods and services. It is always the most accessible and cheapest natural resources that are used first and, as a general rule, the subsequent use of the less accessible and the dearer is dependent on more advanced technology and more capital. For example, mines have to be sunk deeper and have to move more air, water and spoil per ton of mineral produced; as inshore fisheries are exhausted, bigger vessels are needed to exploit more distant and deeper waters; and new sources of water supplies generally involve more expensive reservoirs or deeper bore-holes. Similarly, the dangers of increased pollution of air, water and soil are technically avoidable but only by methods that involve heavier investment. Again, within every industry the increased output per man-hour on which rising standards of living depend can be got only by installing new and more expensive machinery. In every field investment is needed not only in plant, equipment and buildings, but in acquiring the appropriate scientific and technological knowledge and in training the necessary man-power. Although technological breakthroughs give rise to occasional exceptions, as a general rule, it may be expected that the investment required for increments of growth in population and per capita income will continue to rise in future.

There are serious threats to the ability to meet this growing need for investment. Not only will the total investment required be large but individual investment

projects are likely to be of ever increasing size and uncertain profitability. Nuclear power stations, water supply drainage and sewage systems and offshore oil wells already require sums running into hundreds of millions of pounds and are of such doubtful profitability that only government authorities or very large private companies or consortia are able to undertake them given the risks and burdens involved. The prospects are that such projects and new kinds of projects - for instance, for exploiting the manganese nodules on ocean floors, or large fusion plants or primary fuel/chemical/ electrical complexes - will be larger still. Again, the need to deal with the less-easily-treated forms of pollution will further add to the size of the investment needed per plant and diminish its chances of commercial profitability. In the case of projects that are desirable mainly for reducing pollution or increasing amenities these difficulties may prove insuperable - the projects will not be attractive to private industry and may not carry sufficient priority with the public for governments to invest tax-payers' money in them. In the case of projects that are vital for maintaining economic growth prices can be expected to rise sufficiently to attract private savings or governments can be counted on to make the necessary investments. But this will require other vital conditions to be satisfied. For the investment to be undertaken from private saving the conditions will have to be propitious for the operation of large companies operating on a wide geographical basis. If governments are to do it they will need to be strong enough to collect the required savings and to execute and maintain the public works efficiently. In either case a precondition of adequate investment is a reasonable degree of confidence in the future based on financial, social and political stability.

### Financial stability

Investment being the sacrifice of immediate, for future financial benefits, it depends on confidence in the value of money. And because worry about the future is highly destructive of happiness, the same confidence is also an important general requirement for the quality of life of individuals. The maintenance of a healthy society requires that those who contribute most towards the collective good should have expectations of their efforts being rewarded but these requirements are increasingly difficult to meet as the result of the accelerating depreciation in the value of money. Accelerating depreciation is characteristic of inflation because lack of confidence is communicated explosively as soon as it is seen to be justified. In the first decade after the Second World War, inflation was taking place in most countries at a rate of about two percent. By the end of the second decade this had increased to about four percent and it is now running at well over ten percent. Britain, whose pound sterling was once as good as gold, now has a currency like that which used to characterise a bankrupt underdeveloped country. Our present rate of inflation means that existing sums of money will become almost worthless within the span of a single generation. It threatens poverty for some



and gives opportunities of riches for others, the distinction between the two having not much regard to the ability, effort and social value of the people concerned. It means that future benefits have to be heavily discounted in comparison with present benefits, and this makes long-term commitments difficult and encourages emphasis on quick returns. Investment generally is discouraged and particularly in the kind of low return projects needed to offset the slow run-down of natural resources. It also exacerbates labour relations and disrupts the social and political stability needed if material quality of life is to be maintained.

### Social and Political Stability

The difficulties of ensuring adequate investment over the next few decades are closely linked with the problems of securing social and political stability. Because savings for the sake of long-term benefits are at the expense of immediate increases in consumption they are not popular. Even in the most prosperous and sophisticated countries of the world, higher real earnings, lower taxes, and better education, health and housing, are more effective vote-catchers than public works and governments have to heed these preferences if they are to remain in power. Big companies, and especially big international companies are viewed with suspicion and profits are thought by many to be unjustified even when retained in the business for further investment. Pressures for greater equality of incomes are strong and movement in that direction cannot be expected to result in more savings for private investment, because the latter are more readily made by the wealthy than by those whose incomes are barely sufficient to meet their day-to-day needs. In the prosperous societies of the west, advertising, the communications media, trade union action and the efforts of the political parties to gain popular support as well as the desires of the less well-off to enjoy material satisfactions that they see being enjoyed by other sectors of society, all generate high expectations of early and substantial improvement in standards of living. These pressures favour neither the private nor the state saving that is needed to permit the expectations to be realised. Yet, if the expectations are thwarted by the limits of the resources that can be tapped with the available plant and equipment, the resulting social and political instability will further reduce the viability of large populations living in capital-intensive-technologically-advanced countries. Moreover, it is such countries that are most vulnerable to internal unrest because they are so dependent on very large and complex plants like power stations, coal-mines and oil refineries which a small number of determined dissidents can put out of action.

The restraints and disciplines on which capital investment, and therefore material quality of life, depend are in conflict with another aspect of the quality of life - namely, the desires of individuals for freedom and participation. One of the main criticisms levelled at the modern way of life is that it is excessively regimented and does not give the individual scope to exercise his own initiative,

to express his own personality and to have a say in the decisions that affect him. The individual feels frustrated at his place of work. Working for a large company or a big authority whose main decisions are necessarily taken by a relatively small number of remote people whose channels of communication to him are long and complicated, he does not understand the reasons for their decisions or appreciate the inevitability of delays and sometimes confusion in the organisational structure. His own work being highly specialised in the interests of productivity, he finds it monotonous and his contacts being largely limited to his immediate colleagues it is not easy for him to understand the problems of others. The efforts of his trade union organisation are directed mainly at maximising his earnings and minimising his hours of work and this too increases the conflict with management. The difficulties of the British coal industry both under private and national ownership illustrate these deep-seated factors. The difficulties of the industry under private enterprise in the twenties and thirties were apparent enough and the creation of the National Coal Board was hailed as the solution to them. But as has been shown by the writings of Lord Robens, Mr. Kelf Cohen and others and by various reports on the industry (including that of the Aberfan Tribunal) as is demonstrated by the deteriorating record of absenteeism and strikes, nationalisation (at least in the form laid down by the 1946 Act) has not produced the hoped-for results.

The individual feels frustrated not only at work but at home and within his local community. His home life is impoverished because his wife also goes out to work, his children attend large schools with impersonal teachers and because in response to changes in his own or his wife's job, he has several times to move his home and so loses touch with relatives and friends. The wider community in which he lives is also impersonal because his home is likely to be in a large and monotonous housing estate a long way from his place of work and from social centres; church and chapel have come to mean nothing to him and his local authority is so large that it signifies little more than the central bureaucracy. Even the central managers themselves, although they enjoy a high level of material benefits, lead highly stressed, anxiety ridden and in many ways socially-and spiritually-deprived lives.

These defects in way of life go a long way to account for the rapid growth in mental ill-health, absenteeism, broken homes, and crime rates that are apparent in Britain. That the defects are very deep-seated is suggested by the existence of the same trends in social instability in communist, socialist and capitalist countries.

There is, in fact, a conflict between improving the quality of life in material terms and improving it in social terms. The former calls for the maximisation of the volume, and the minimisation of the cost, of goods and services. This means technologically advanced and expensive investments, large units of organisation, subdivision and specialisation of labour, employment of women,

mobility of labour, uniformity and intensive promotion of products and large-scale contracts. These are the very things that give rise to social ill-effects. As governments seek to meet the expectations of higher material standards, and to counter the pressures of population growth and limited natural resources by more investment and higher economic efficiency, these social ill-effects must be expected to grow and to place increasingly heavy strains, both on individuals, and on social and political structures and on communist and socialist as well as on capitalist countries.

Political stability depends also on external factors and some of the threats here can be clearly seen in the plight of some of the less-developed countries. Their needs for development are greater and their chances of securing it are less than those of the more advanced countries. Their needs are greater because their living standards are only a fraction of those of North Americans and Europeans and their populations are growing faster. Their chances of development are less because many of them have natural resources that are poor or are already being rapidly exhausted. Their populations include a smaller proportion of effective workers and their financial resources for investment (especially in the kind of capital-intensive project needed to off-set the run-down in basic resources and to avoid pollution) are small. Moreover, with a high proportion of impatient young people in their population, a low level of literacy and less stable social and political systems, they are not commercially attractive to outside investors except for the purpose of removing such natural assets as they may have in the form of oil, minerals and other scarce products.

The internal difficulties of the less developed countries are not only of concern to their own populations but affect the prospects for maintaining the quality of life in more developed countries like Britain by threatening to interrupt the supply of essential commodities and to create tensions that could lead to war. Even assuming generous overseas aid (and generous aid is not a substitute for self-help) it would be optimistic to expect more than a proportion of the less-developed countries to be able to resolve their internal tensions and establish stable political conditions on the basis of continuous improvement in material conditions of life for their own population and continuous export on reasonable terms of the commodities required by the developed countries. Some of the less-developed countries may succeed in establishing stable political conditions but may do so by methods that involve restrictions in the flow of trade which will be prejudicial to living standards elsewhere and therefore dangerous for world peace. Others of them appear unlikely to escape the scissors of population growth and limited natural resources and to establish any kind of strong government. Such countries may be unable because of internal troubles to maintain their exports and their weakness will offer temptations to stronger countries to get hold of such natural resources as they have of value. Such temptations may be great even for countries like the United States, Soviet

Union and China, which are comparatively well endowed with natural resources and may prove irresistible to such a strong but weakly endowed and therefore increasingly desperate country as Japan.

### Health

Most people, forced to choose between wealth and health would choose the latter because, without it, a high material standard of living in an attractive physical and social environment would be empty.

It is natural to assume that health will continue to improve as national income is increased, more is spent on the health services and medical knowledge deepens. There have indeed been spectacular decreases in mortality and morbidity through the provision of clean water and efficient sewage removal, better food and housing, mass immunisation, the development of antibiotics, vaccines and a wide range of low-cost drugs and through the improvement of medical and surgical techniques. It is not necessary to go back to the horrors of life as depicted say by Hogarth to appreciate the progress that has been made. It is only necessary to think back to the twenties of this century and consider the toll that was still taken then by tuberculosis and diphtheria, the inadequacy of anaesthesia, the rudimentary state of cardiac, vascular and neurosurgery and the primitive treatment available for psychiatric patients in order to appreciate the progress that has been made during the last half century. It is natural therefore to assume that such improvements will continue as still more resources were made available and it is understandable that only a quarter of a century ago, the British National Health Service was set up on the assumption that by providing a high-quality free medical service, the health of the whole population would be so improved that the costs per head of population of providing the service would decline and total expenditure would be no higher at the end of twenty years than at the beginning.

But these assumptions have proved to be hopelessly optimistic. Although the infectious diseases of infancy and childhood, of malnutrition and damp housing have been largely eliminated, their place has been taken by the more intractable illnesses linked with old age, over-eating, inadequate exercise, indulgence in stimulants, and drugs and excessive mental stress.

For many of these illnesses there are no cures and treatment is expensive in manpower and equipment. After allowance has been made for inflation there has been a tremendous increase in the expenditure of the National Health Service during the last two decades but there has been little reduction in mortality and morbidity. The United States has a higher standard of living and spends far more per head of population on health than any other country in the world, but its infant and general mortality rate are far from being the lowest and a substantial number of its young men are not healthy enough for any form of military service. Increased national income and expenditure on the health

service are not necessarily therefore in the interests of one of the most important of all the ingredients of quality of life.

Indeed it is hard to avoid the conclusion that after basic needs have been achieved, pursuit of further material prosperity is likely, despite increases in expenditure on the health services to lead to less rather than more good health. The human body and brain evolved perhaps about fifty thousand generations ago and nearly all of our forefathers lived the physically active lives of hunters and collectors in close contact with nature, and at low densities. Only the last five hundred or so of these generations that is the last one per cent of them have lived in settled communities and only the last few of them - a tiny fraction of the total - have lived in large urban areas. Thus, very recently in the history of his species, man has begun to live a sheltered, artificially warmed, overfed and under-exercised life - a life that is soft and indulgent in relation to the body and at the same time stressful and hard in relation to the mind.

Even if, therefore, the threats to increased material prosperity over the next few decades are overcome, it does not follow that there will be an improvement in the physical and mental health of the population. The proportion of ascetics in the population is small and for the large majority increased prosperity means more eating and drinking, more smoking, a higher standard of comfort, reduced physical effort and the use of stimulants, tranquilisers and other drugs. Expenditure on the health service may be increased and medical science move to new peaks of diagnosis and treatment, but without a change in the way of life of the patient, these efforts will avail little.

For a small but growing minority of the population, the quality of life is also under another kind of health threat - that presented by defects at birth. About two million or four percent of the British population suffer from a serious congenital handicap - that is, a physical and/or mental handicap, that is inherited from the parents or caused by something affecting the development of the foetus or going wrong during the process of birth. These defects can mean blindness, deafness, incontinence, paralysis, distorted bodies, inability to digest normal food, inability to read, write or speak and they can mean a life-time in leg irons, in a wheel-chair, in a bed or in a special institution. A further three per cent or so of births are also of severely handicapped babies who do not survive to maturity. The newly born also include a substantial further proportion of babies with less severe forms of handicap, such as, a low intelligence and lack of physical vigour. Although, granted an appropriate environment many of the latter are capable of leading happy and useful lives, congenital defects remain one of the most tragic and serious threats to the quality of life, both for the handicapped themselves and for their families. They also account for the substantial part of the total costs of the health and social services.

There are some grounds for optimism about the future of congenital disease. Some of it is due to inadequate nutrition and insufficient care of the pregnant mother and is therefore remediable. Improved diagnoses and procedures can also be expected to reduce the incidence of accidents at birth. Again, in the same way that insulin has been found effective for dealing with diabetes, new chemical and dietary treatments are being developed to deal with other diseases while surgery continues to develop to treat some other defects. Improved care, education and training will also help to improve the lot of the handicapped.

Unfortunately, there are other factors working in a contrary direction. Many of the treatments that are scientifically possible - for example organ transplants and special diets - impose such a burden on the defective and his family and such a high cost on the health service that their application is critically dependent on the total resources available. Again, the efforts that doctors make to rescue and preserve life - for example, by operating on cases of spina bifida or mongols with heart defects or by the intensive nursing of prematurely-born babies or by expensive chemical and dietary treatments may, despite some striking successes, have the net effect of increasing the proportion of mental and physical defects in the population. Although the fertility of the severely defective is low, the general effect of increased rescue of those with genetically-determined handicaps is to promote a gradual rise in the proportion of such people in the population. Another menace of which the thalidomide babies were a tragic example is presented by the increased use of drugs and manufactured foods, particularly by expectant mothers, and less directly by the injection into human bodies via the air, food and water chains, of a wide range of deleterious chemicals and radioactive substances. At the same time, as these factors operate to increase the percentage of the handicapped in the population, the direction of social and economic change is to increase the difficulties that the congenitally defective face in their lives: it is becoming more difficult for them to be cared for within their own families and harder for them to cope with the crowded, impersonal life outside the home and to find employment in high pressure, modern industry.

### Education

Can education continuously improve its contributions to quality of life? One of these contributions is vocational: to give successive generations of students the scientific and technological training needed to carry out the increasingly different task of maintaining material living standards as population presses harder against the limits of nature. Another is liberal: to spread appreciation of the arts and encourage development of mind and body in the non-vocational ways that add to the pleasure of living. A third is social: to prepare the young to play a useful and responsible part as citizens.

There are some reasons for answering this question affirmatively. The importance of education is generally recognized and there is a good prospect that the proportion of the national income spent on schools and colleges will continue to rise. This has been one of the fastest fields of growth in most countries, and, in Britain, the proportion of young people going on from school to college has been doubled in little over a decade. The present proportion (a quarter of the total age group) is still low compared with the United States and some other countries and, despite the vicissitudes to be expected through economic fluctuations there is a reasonable expectation that it will grow further. Moreover, the importance of science and technology is well appreciated by all the authorities and there is unlikely to be any unwillingness to supply the appropriate research and teaching facilities.

Nevertheless there are grounds for concern. In the first place giving a longer education to more students does not necessarily produce better citizens or reduce social tensions. In Britain, as in the United States and elsewhere an unparalleled increase in educational expenditure has not prevented a serious increase in crime, broken homes industrial unrest and similar manifestations of social ill-health. These manifestations affect the well as well as the less-educated and, although the reasons for them are debatable, there are a number of factors which may be responsible. One is the domination of educational methods by the view that learning is facilitated if teaching aims at stimulating and following the individual pupil's own interests. This is sound up to a point but children who are not treated with some firmness tend to develop into self-centred and self-indulgent individuals inadequately prepared and motivated to play a responsible part in society. Another factor is the reduction in teaching and guidance of a moral or personal kind. Students resent paternalism and as schools and colleges get larger it is in any case more difficult for staffs to give them personal attention. Moral guidance is increasingly left to the home and the local community which themselves, for reasons given earlier, are increasingly unable to provide it. In the third place, the educational structure is a product of the existing social system and is not designed to change it by seeking to eliminate the class differences that contribute to social tensions. Schools and colleges are socially differentiated and life chances in education and in subsequent careers largely reflect the accident of birth. Thus, the great educational expenditure of recent years has done little to bridge the vast gulf of misunderstanding that separates, say, the Eton and Oxford trained businessman or politician from the Welsh miner or the Midlands car worker. For all these reasons, therefore, unless further increases in educational expenditure take a different form from that taken so far, they may not promote the understanding and cooperation that will be needed if investment is to take place on the scale required to provide a rising standard of living for growing populations.

The attitudes to life that will determine whether the citizens of tomorrow are morally better than those of today and whether social tensions will be reduced are in any case shaped less by schools and colleges than by broadcasting. The average young person of today will, over his life-time, watch television and listen to radio for more hours and with greater intensity than he will attend to teachers and preachers and read printed material. The broadcasting authorities provide entertainment and news and programmes of cultural, social and political significance which are very wide ranging and highly educative in a general sense. But the provision of ethical or moral guidance is far from being their main aim and the very extent and catholicity of their programmes tends to produce bewilderment and scepticism rather than conviction and belief. The advent of commercial broadcasting has put more emphasis on the provision of entertainment and competition for audiences. Many of the programmes shown are deeply immoral in their emphasis on sexual gratification, material success, violence and crime. If the principal agency for the shaping of attitudes does not aim at developing self-restraint, kindness, honesty and the desire to cooperate for the general good it is not surprising that there is a deficiency of these qualities in the population.

There are other grounds for concern about the future contribution of education. As knowledge increases it demands more specialisation and the gaps between the arts and sciences and also between the different sciences get more difficult for individuals to bridge, so that there is a tendency for the output of the educational system to have less width of knowledge and understanding. Again, as progress from school to college comes to be regarded as a natural right, the motivation and application that are needed for high academic achievement may weaken. Furthermore, as the educational output is increased by building larger schools and colleges and by keeping down their capital costs, the important personal links between student and teacher are diminished, more weak students are allowed to go to the wall and the rare individual possessing outstanding ability that should be encouraged is overlooked.

There is also the danger that the output of graduates with high expectations of good jobs will increase faster than the ability of the economy to provide them with such jobs. As experience in a number of countries has shown, this can result in a dangerous increase in disillusionment and alienation amongst the young.

Finally, all education institutions tend to be slow to adjust to the fast-changing needs of society. This is partly because it is not easy to diagnose what these changes are and to agree how they should be met and partly because schools and colleges are to some extent isolated from the outside world and have their own in-built inertia. For instance, it has been clear for some time that economists, and other social scientists, historians and philosophers would benefit from being given an understanding of biological and particularly



ecological principles, but little provision of this kind has so far been made; when the need for it is recognized a decade may be needed before the appropriate books can be written and yet a further decade "before a sufficient number of teachers are in post and the curricula have been modified. The universities and schools are, indeed, comparatively detached and slow-moving institutions and experience gives no grounds for complacency about their ability to keep pace with, let alone anticipate the real-life problems of the future. That future threatens to throw up new problems faster than the educational system can offer solutions.

## CHAPTER 4

### THE INADEQUACIES OF EXISTING PHILOSOPHIES AND POLICIES

How adequate are existing political, religious and other philosophies to combat the threats to long-term quality of life discussed in the last two chapters?

No major political party in any country has committed itself to stopping or reversing the growth of its population, to reducing the ill-health caused by genetic defects, lack of exercise and over-indulgence, to controlling economic growth in the interest of long - rather than short - term standards of living and to giving environmental, social and moral objectives priority over economic ones. Many peoples - including the Jews, the Spartans, the Romans and the Mohammedans - have pursued some of these policies over part of their history. But in most cases only such of these objectives as had value for improving the morale and military strength of the people were adopted; reduction of population being of a negative military value was not one of these and when success was achieved austerity was soon abandoned in favour of easy living. Today it is perhaps China and the countries of Scandinavia that come closest to pursuing all the objectives mentioned, although, there are small groupings of peoples thinking on these lines in the United States and elsewhere. In New Zealand a Values Party and more recently in Britain a Peoples Party have been formed on what may be broadly termed an ecological platform and the British Liberal Party also has adopted a good deal of the same thinking in its 1974 election programme. It is not difficult to understand why none of the major political parties has committed itself to all the objectives referred to in the last paragraph. The policies of any party desirous of achieving power have to be in what an effective majority of the population regard as its interest and, because most men and women attach the highest priority to the satisfaction of their most immediately felt needs, the policies of political parties have to be shaped accordingly. Even the wealthiest sections of the richest countries are greedy for more material prosperity and even the most far-sighted of individuals discount future, in relation to present, benefits. Accordingly all the serious contestants for political power (as perusal of election manifestoes shows) gives first priority to matters such as incomes, prices, housing, education, health and transport which require the promotion of economic growth. Improvement of the physical and social environment and conservation of natural resources come much lower in the list of objectives. Similarly, sex and children concern the individual and religious bodies so intimately that there are few fields in which politicians tread more warily. Of course there are differences between the parties as might be expected from the varying interests they represent: the owners of country estates, under-paid wage-earners and slum dwellers for example, see conservation of the environment, new factories and local authority housing in very different lights. But the reactions of all to political policies that would

prejudice their access to goods and services or interfere with their sex and family lives would have much in common.

The policies of conservative parties - Britain as elsewhere - reflect these political realities and are conservationist essentially in the sense that they seek to meet the immediate needs of the electorate while making only such changes in the existing financial political and social structure as can be clearly demonstrated to be desirable and necessary. The existing structure is itself intimately linked with, and dependent upon, economic growth and the paramount concern of conservative policies is to promote that growth. The policies include such matters as good planning of town and countryside and control of pollution but not to an extent that would hold up the pursuit of material prosperity. They include social well-being and national unity but these objectives are regarded as best pursued by emphasising tradition and as far as possible maintaining the existing social and political system. Again conservative policies include the promotion of international cooperation but with an emphasis on the immediate national self-interest.

That the principal objective of Conservative policy in Britain is to promote short-term economic growth is apparent from the record of the 1970-74 administration and from the content of the 1974 election programme. Thus the many changes in budgetary industrial and incomes policy made between 1970 and 1974 represented repeated attempts to maintain a high rate of growth first in one way and then in another as difficulties were encountered in securing the cooperation of the trade unions in dealing with the problems of rising world prices and of inflation. Again the 1974 election was fought essentially on the issue of how to secure an increase in real national income without fundamentally changing the existing structure. The need for an effective incomes policy and for acceptance by the miners and the trade union movement of the statutory incomes policy and of the rule of law were aspects of this and so also were the proposals for developing North Sea oil, regional and taxation policies, housing and improvement of pensions which also featured in the programme. Other matters such as education, the environment, the arts and broadcasting rights of women, immigration and Northern Ireland took second place and apart from promising reform of the Abortion Act on the lines recommended by the Lane Committee, nothing was said about the population problem.

Despite the warnings given by the reductions in supplies and great increase in price of oil following the Arab-Israeli war by the world shortages of cereals, soya beans, meat and fish and the serious famines that had occurred in some parts of the world in the twelve months immediately before the February 1974 election, no doubts were expressed about the continued availability of oil, food and other essential imports. And, although the many indices of social malaise had shown continuing deterioration, there was no admission of serious dangers

on this front other than those arising from the intransigence of the trade unions and the Irish, and no proposals for social or political reform were put forward.

Conservative policies are inadequate to promote long-term quality of life because of their concentration on short-term material responsibility, because they do not acknowledge the social tensions that arise from the pursuit of that prosperity and are reluctant to change the existing social and political order and because they do not recognise the emergence of a British and world population and resources crisis.

From the same point of view the traditional policies of the progressive political parties are also inadequate. Although under the banners of freedom, equality and progress these parties are historically associated with political and social change rather than the preservation of the existing social and political order, their overriding aim has been the promotion of economic growth. Liberalism had its origins in an amalgamation of new industrial and merchant interests united in opposition to those of the older land-owning classes and rested on the philosophical basis that minimum interference with the freedom of the individual and political emancipation of wider groups of the population through freedom of speech, equality before the law and representative government controlled through the ballot box and the lifting of national restrictions on navigations and the movement of goods would release human energies in a way that would promote trade, industrial output, employment, profits and wages and permit health, housing and education to be improved and standards of living to be raised. Largely sustained by this philosophy pre First World War Britain succeeded in multiplying its population and greatly increasing its prosperity on the basis of its favourable geographical position, a prodigious rise in the use of its own coal resources and natural resources drawn from all ends of the earth. As the modern Liberal Party has been first to acknowledge, repetition of such expansion is no longer a reasonable expectation and the old philosophy that supported it needs to be rethought.

The philosophy of present day progressives is not, of course, that of their nineteenth century predecessors but the thinking of the socialist and communist movements that have dominated twentieth century radical politics is also inadequate to overcome the threats now seen to long-term quality of life. These movements had their origins in the growing numbers of workers in capitalist society who became increasingly alienated from the established order as units of employment got larger, work more specialised, capital more concentrated, management more remote and inequalities of income and wealth more apparent. Their main objectives have been, and still are, to improve the material standards of living of the less-advantaged majority of the population by raising incomes, providing better housing, education and health services and by securing greater equality of career and social opportunities. Their policies to this end are to strengthen the trade unions in relation to the employers and their

Parliamentary representation in relation to that of the parties representing the interests of the established order, to transfer control of key capital assets from private to public hands, to develop planning at national level, to achieve more equality in the distribution of income and to provide more public expenditure on educational health and similar services. Whether the objectives are best achieved by their policies rather than by the policies of conservative parties is one of the main political questions of our day. But, whatever the answer to that question is, the achievement of socialist objectives is linked with the growth of industrial output, and the battle between left and right, to demonstrate by results the superiority of the socialist or capitalist system, accelerates this growth to the maximum. The struggle for world influence between the United States and the Soviet Union and the struggle for power within countries like Britain between conservative and socialist parties is largely fought in terms of the speed at which the rival parties can increase gross national product and private and public consumption: in other words the speed at which they increase industrial output and consume natural resources. Socialist, like Conservative, policies therefore involve the serious risks discussed in Chapters 2 and 3 of deterioration in the social and physical environment and of run-down of the natural resources on which continued growth is dependent. Moreover the objectives will only be achievable if technology and investment are adequate and the latter requires economic and political conditions favourable to it.

The policies of the British Labour Party for promoting material standards of living may, like those of the Conservatives, result in failure to secure quality of life in other respects. This danger is inherent in the high priority given to economic growth over improvement of the social and physical environment and is made worse by the methods of centralised planning, centralised forms of nationalisation and confrontation of employer and employee that are employed. This danger can be seen in the large drab council housing estate with its gangs of delinquent young people, in the giant comprehensive school with its high proportion of poorly-motivated and ill-educated students and in the great centralised bureaucracy-ridden nationalised industry with its dissatisfied, strike-prone workers. Each one of these three is the result of much effort by well-meaning people and each constitutes in many ways an important advance. Nevertheless, each has taken a form that has not succeeded in adding to quality of life from the architectural and visual point of view or in terms of mental health, cultural achievement and civic and moral values.

Moreover, existing Labour Party policies do not promise any change for the better because they cannot acknowledge the social dangers of size, centralisation of power and employer/employee confrontation without abandoning much of their historical philosophy and losing the support of the trade unions. The trade unions themselves are also entrapped by their past and by their requirements for continued survival. For example, it took decades of

sacrifice to create the National Union of Mineworkers as an effective national organisation that could confront the coal owners from a position of strength and further decades of argument about the advantages of national ownership of colliery assets and central planning were required to get the coal mines nationalised. Like other unions it has to keep the support of its members by securing material benefits for them that they would not get otherwise. Thus the Union is committed both to maintaining the National Coal Board bureaucracy as a Socialist achievement and to confronting it as the employer. Other trade unions are in a similar position in relation to possible changes in the form of private enterprise. It would weaken their position with their members if they involved themselves in management and shared responsibility for company results, and it would destroy the power of union headquarters if a real community of interest between employers and employees was established at plant and company level. Short of more nationalisation, they too are driven both to supporting and to undermining the existing form of industrial organisation.

Labour policies threaten moreover to be self-defeating in the long run even from the limited point of view of their principal objective of improving the material standards of living of their supporters. One of the dangers is inadequate investment. The trade unions, on whose support the Labour Party is dependent and who can bring economic life to a stop if their demands are not met, regard their essential responsibility as being to press for more pay and shorter hours for their members not to advocate the abstinence and effort on which investment is dependent. It is for the employers or the Government to make the investment and provide the wherewithal to meet their demands. Unfortunately the kinds of taxation and other policies appropriate for securing immediate improvements in living standards and greater equalisation of incomes and wealth do not encourage the necessary savings on which private enterprise is dependent. And the negative attitude taken towards profit-making and business is also discouraging. So far as the alternative of public investment is concerned the Labour Party with its non-Marxist tradition and its dependence on the trade unions has neither the outlook nor the strong disciplined party organization needed for wholesale nationalisation, for enforcing savings through taxation, for planning, executing and maintaining all the investment projects required and for ensuring a politically-viable balance between the final output of consumer goods and the expectations of the public. A small country highly dependent on international trade has also greater difficulties in relying entirely on public investment than has a large, self-contained country.

Present Labour policies are also inadequate to ensure the access to overseas sources of food energy and raw materials needed for continued economic growth. As export surpluses of these dwindle through exhaustion of resources and growth of demand in the producing countries and as countries like Japan, Germany and the United States compete more sharply for what is available,

British access to these supplies will depend on its commercial ability to pay and on its diplomatic strength. As regards the first of these, there is danger that because of inadequate investment and employer/employee confrontation reliable supplies of technologically advanced, attractively designed, competitively priced and high quality goods and services will not be available to earn the foreign currency needed to compete with other buyers. The second condition is made more difficult to satisfy by the economic weakness but important advantages could still be realised by making full use of British knowledge and experience and strategic position in relation to the Commonwealth, Europe and America. But there is a serious risk that these advantages will not be taken and that present Labour foreign policies will leave import dependent Britain without a real Commonwealth, without an effective European Community, without a reliable Anglo-American alliance and without a strong United Nations Organisation in an increasingly dangerous world.

Finally, because social, political and economic systems are inter-related, the Labour Party's pursuit of economic growth; the methods it employs and the expectations it arouses may produce a variety of feed-backs that will in the long run be inimical to economic growth itself. As shown in Chapter 3 social and political malaise must be largely attributed to population and economic growth and to the emphasis placed on size, efficiency and similar economic, rather than social, considerations and manifestations of this malaise such as, increased crime, absenteeism and labour disputes react back on the economic system. Similarly failure to improve the general physical and mental fitness and work-motivation of the population from which industry draws its employees, and the tensions created by employer/ employee confrontation and by fanning unrealistic expectations of improved material standards of living diminish the chances of long-term economic growth. That a vicious cycle of pursuit of material growth leading to more social tension is a real threat is shown by the experience of the world's developed countries since the Second World War. Both the great socialist and capitalist countries have had over these decades an increase in material prosperity without parallel in world history but this has not produced more contented populations or stabler social and political conditions: the long-run economic and social viability on which the quality of life of our children will depend.

For these reasons the Labour Party cannot, any more than the Conservative, claim to have policies possessing the social and economic viability on which long-term quality of life will depend. It is dependent for support on promises of material benefits that require fast economic growth. But its policies for securing this growth are likely to increase social instability and unlikely to secure the necessary large private or public capital investment. Moreover the Party has not as yet seriously addressed itself to the world population and resources problem and its economic and foreign policies offer a poor prospect of securing access

to sufficient overseas supplies of food, energy and raw materials to support fast economic growth.

The Nationalist Parties having increased their support over recent decades to 22 per cent of the Scottish, and 11 per cent of the Welsh, electorates, it is relevant to consider whether their policies are likely to contribute to long-term quality of life. The nationalist movements of minority populations tend to go through distinctive historical phases of which the first is marked by emphasis on the distinctive cultural or folk tradition of the minority and the need to preserve this, and the second is marked by a realisation that cultural considerations have less appeal to the general population than material ones and accordingly, by a shift in the emphasis of the movement towards stressing the economic advantages that could be obtained through independence. The 1974 election slogans Scottish (or Welsh) and Rich, or British and Poor and the stress placed on North Sea and Celtic Sea Oil and economic issues generally showed that the British nationalist movements are in the second stage.

The cultural and economic objectives of minorities are very different in their implications. The cultural objective diversifies and enriches the cultural life of Britain and the whole world; it reinforces tradition and community life; it need not threaten the vital interests of other people and it can, therefore, be in all respects socially stabilising and beneficial. The majority has a duty to recognize this. On the other hand, independent pursuit of higher material standards of living by the minority is a different matter for three main reasons. In the first place, it threatens to increase tensions by leading to the adoption of separate commercial, industrial and financial policies and indeed of separate foreign and defense policies, all of which could threaten the vital interests of the majority. For example, independent development of offshore oil would require separate negotiations with the oil companies with the United States and the European Community and could lead to separate pricing systems and import/export controls. Scotland and Wales could hardly expect to keep to themselves the benefits of resources in which they had an advantage and continue to retain a good share of those (for example the engineering industries of the Midlands and the financial institutions of the City) in which England has an advantage. Nor could England be expected to leave Scotland and Wales free to make their own treaties with foreign powers. The minority has a duty to the majority in such matters. In the second place, there is a danger that within Scotland and Wales themselves the effect of giving emphasis to the pursuit of economic growth would, in the ways discussed in Chapter 3, add to the forces already at work to weaken both the social structure and the cultural tradition. In this way, the Welsh language could be destroyed by some of the very people who love it best. Thirdly, present Nationalist, like Conservative and Labour, policies ignore the existence of a world population and resources problem and for that reason give inadequate guidance for achieving long-term material, let alone other,



qualities of life. Thus, although the reserves of North Sea oil are large in relation to Scottish home consumption they are small in comparison with the needs of the companies who are developing them and their duration will not be long in relation to the life of the Scottish people. For these reasons the tiger of growth on which the nationalist parties are now riding threatens to prove dangerous to its riders as well as to those around.

Of the main political parties the one that has gone furthest in reappraising its attitude and tackling the kind of fundamental problems discussed in Chapters 2 and 3 is the Liberal. Its 1974 election programme recognized the existence of a world population and resources problem and the need to restrain population growth and to control economic growth in the interests of improving the social and physical environment. It aims to reduce political tensions by devolving some central government functions to parliaments for Scotland and Wales and provincial assemblies for England and by strengthening local government. It proposes to eliminate confrontation between capital and labour by developing systems of co-partnership that would identify the interests of employees with those of their firms and to reduce social tensions by fairer distribution of material rewards. It recognizes the critical importance of controlling inflation and advocates taxing those who exceed statutory limits to prices dividends and earnings. It attaches importance to strengthening the European Community as a democratic outward-looking body, helping the underdeveloped countries and supporting United Nations activities.

The main doubts about these policies attach, not to their relevance to the objective of long-term quality of life, but to their practicability. Have their radical implications been appreciated and are they likely to get sufficient support? The policies are radical because they call for a high degree of self-restraint and unselfishness in readiness to limit family size, to forego short-term for long-term advantage and to help other people. They, therefore, ask for much more than is involved in encouraging the less-well-off sections of the community to press for a larger slice of the national cake. They are radical also because they imply shifts of power at the expense of all the major interests: a shift from Westminster and Whitehall in the direction of Brussels and the international agencies and also in the direction of Edinburgh, Cardiff, the provincial centres in England and the local authorities; and a weakening of the position of both shareholders and trade unions through the creation of co-partnership boards. Because the policies would appear to be against their immediate interests, they would seem likely to incur the opposition of both sides of industry and of central government administration. Support could only come by persuading these interests and the general public that the policies were to their long-term advantage.

Another inadequacy in the philosophy of both socialist and liberal parties is that they have been traditionally associated with a kind of environmental thinking

that may no longer be adequate. This thinking dates back at least to the time of Rousseau and the philosophers of the enlightenment, and rests on belief in the perfectability of the individual and faith in the progress that can be secured by improving the environment to meet his material needs and give him the education he requires to fulfil himself. This thinking was encouraged throughout the 19th century by the triumphs of science and technology and by the new theories of evolution which suggested that life was moving towards ever-greater heights. But the dangers now seen to long-term quality of life directly challenge these beliefs. Increasing numbers multiplying freely, enjoying higher material living standards and fulfilling themselves more completely may not be marching to ever greater heights but placing pressures on natural resources that will lead to even final catastrophe. Freeing them from discipline may not be the way to produce perfect human beings; it may result only in their using their freedom to maximise their individual satisfactions and to minimise their efforts. And encouraging them to expect continued improvement in living conditions may only generate unrealisable expectations which, when disappointed, will place an unsustainable pressure on the social and political fabrics.

Again, progressive political opinion has traditionally distrusted any suggestion that the principles of genetic science that apply to all other forms of life are also relevant to man. The reasons for this distrust are not hard to understand. That men are unequal in their genetic endowment and that some have handicaps that cannot be overcome by improving the environment not only runs counter to the principle of equality but can be used by defenders of the status quo to oppose highly necessary reforms and improvements in the environment. Some of those who have espoused a genetic view have aroused legitimate fears, that acceptance of this view would open the door to reactionary and indeed inhuman political systems. Thus Herbert Spencer believed that the weaker or less able members of society should not be artificially preserved because this would weaken the race and others took the same argument further and contended that measures of social welfare and reform would only promote the survival of the unfittest leaving the laws of competition to promote the survival of the fittest would be in the long-term interests of the species. Such views and the crudities of some of the early eugenicists, who advocated breeding from the best-endowed and controlling the reproduction of the unfit, fused only too easily with unfounded theories of race and nationalist prejudices to provide a basis for racist and imperial policies and to rationalise and justify war. Views of these kinds have understandably alienated progressive thinking from the whole body of genetic knowledge and made it difficult for scientists, doctors, educators, and social reformers to address themselves to problems of a genetic origin even though some of these are seriously destructive of the quality of life, and are susceptible to humane, non-racist and non-authoritarian solutions.

Perhaps even more fateful in shaping human destiny than the traditional philosophies of the political parties has been the kind of philosophical outlook that has dominated the development of science and technology and the relationship between men and between man and nature. From the early Greek philosophers onwards western man has evolved an analytical and detached way of thinking whereby scientists and others have concentrated on one particular problem at a time disregarding the wider implications, and by assuming the simplest possible basic entities (like the point, the line, the atom, the electron or the gene) and working out mathematical relationships have found ways of explaining observed phenomena. In this way they have achieved great triumphs, first, in understanding and then, in controlling nature. But there has been at the same time a loss of the more general understanding that comes from taking a less detached more holistic, far-sighted and sympathetic ? approach to nature and to man's place in it. Although there have been great achievements the history of many civilisations and their works has shown that some of the greatest triumphs over nature have been followed by the greatest disasters, and it is possible that the greatest triumph of all in recent times the release of the forces locked up in the atom - will lead to the greatest disaster of all. Similar triumphs - perhaps the creation of new forms of life by the bio-chemists and the bio-physicists - may be celebrated before the end of the century and turn out to be no less awful in their potential for both good and evil. Again the application of the same kind of analytical and detached approach to social and economic problems, can secure substantial material benefits but because little regard is paid to wider questions relating to the overall harmony between men and between man and nature, the ultimate consequences in terms of the happiness of the individual are doubtful. The detached analytical approach is too productive to be abandoned but it needs to be supplemented more fully than it has been in the past by a more comprehensive and longer-term kind of thinking.

It is in religious philosophies that the latter kind of thinking is mainly to be expected but although these philosophies have greatly influenced human attitudes it is not possible in their case either to give an unequivocal affirmative answer to the question whether they give the correct guidance in relation to the problems involved by long-term quality of life. On the one hand much of the Jewish and Christian teachings can be interpreted as directed at building up the morale and increasing the population of the faithful in group so as to make it more effective in competition with other human groupings and other forms of life. Much of the teaching in the Pentateuch, particularly that stressing the superiority of the faithful and their divine destiny to conquer peoples of other creeds and that seeking to maximise population growth, is now not merely irrelevant but inimical. There is no place in today's crowded world for the religious militancy and propagationist morality that characterised the Jewish invaders of Canaan or the Christian conquerors of the New World.

On the other hand, as is the case with traditional political philosophies and with the detached analytical scientific approach to nature, the whole of the teachings are not to be rejected because part of them have lost their relevance or are indeed dangerous. There are vital respects in which the great religious teachings are wholly apposite to the problems of the future. There is their warning that all men are a mixture of good and evil and that the battle with the latter must constantly be fought. There are their enjoinders to moderation, self-restraint and love of neighbour and their call for respect to be shown to all forms of life, even the lowliest. In these respects the traditional religious teachings do provide the right ethics for the future.

That all the major traditional philosophies and policies are partially, but not more than partially adequate, to deal with the problems of LQL is not surprising. That they do offer partial solutions is to be expected because these problems are long-standing and fundamental relating to material and other standards of life. To the relationship between man and man and that between him and nature, and philosophies and policies that had nothing of continuing value to say about these matters would be unlikely ever to have come to be regarded as major and traditional. That the solutions they do offer are no more than partial is also easy to understand. Philosophies and policies need support if they are to survive and the supporters may not be numerous if they are expected to postpone immediate, for the sake of later, satisfactions and to sacrifice their own interest for the sake of the interests of others. The true solutions do involve such postponements and sacrifices and are intrinsically difficult even for religious bodies to urge. For example encouraging their followers to limit their number by population control and to respect the beliefs and usages and interests of peoples of other faiths could endanger their own continued existence. Again, while it was possible and beneficial for a long time for the preacher to encourage the virtues of moderation restraint and selflessness with promise of a better life beyond the grave and threat of hell fire, he finds that neither the promise nor the threat carries the same weight today. For the politician the difficulties are even greater because it is less easy for him to call in aid purely moral sanctions and, especially in a democratic country, he has to compete with the leaders of other parties who may have no compunction about basing their appeal on the immediate self-interest of the voters.

Although the leaders of democratic parties have special difficulties of the kind just indicated in tackling the problems of LQL it is of course particularly important that they rather than leaders of other kinds of political parties should do so. The problems could lend themselves to authoritarian solutions. The need to reduce population, to tackle congenital defects and to have a disciplined society in order to conserve resources and to secure and protect the heavy investment required for the development of new resources and for controlling pollution could be used to justify the preservation of the social and political

status quo and the concentration of still more power in central governments and in the developed nations. It could therefore be used by reactionary governments to justify nationalistic and racist policies and end in a paranoid dictator giving the instruction leading to nuclear holocaust. Many progressives prefer to deny the existence of ecological problems perhaps because they see them as too difficult to solve themselves and perhaps because they fear that admitting their existence would be to the advantage of authoritarian politicians. In so doing, however, they put themselves in the position of the individual who finding symptoms of what could prove to be cancer is too frightened to go to the doctor and by making early treatment impossible, loses the possibility of cure. If the progressive political parties and highly -motivated religious movements do not face up to the problems presented by continued population and economic growth and find solutions to them that are consistent with what is best and still valid in their own philosophies, they risk being extinguished themselves, either at the hands of authoritarian institutions or through the emergence of new progressive parties and new religions that do offer solutions.

## CHAPTER 5

### THE POLICIES NEEDED

If existing policies are inadequate to promote LQL what new ones are needed?

Once quality of life is considered from a long rather than a short term point of view the problems to be overcome are seen to be increasingly ecological in character - that is, they are connected with the relationship between man and his environment or the difficulties presented by continued growth of the human population and the further pressures on the environment added by increased economic activity aimed at increasing the level of material well-being. In the very long-term, the finite surface area of the globe and the high cost of getting off it must impose limits to growth as indeed will geophysical and cosmological changes. Such limits, however, are too remote to be of immediate concern and what is more relevant is whether the run-down of natural resources through exhaustion or pollution will impose constraints in the few decades immediately ahead and how these constraints would best be avoided.

In that kind of time span, although they are likely to make themselves increasingly felt, it cannot be said that natural resource constraints will necessarily prove fatal. The necessary scientific knowledge and technology to avoid such limitations already exists or can reasonably be expected to become available. Thus, in the case of one of the most central resources - energy - it is technologically possible as world petroleum and natural gas reserves are run down over the next two decades, to substitute other fuels and to bring about a large-scale production of liquid and gaseous fuels from oil shales, coal and nuclear power. Similarly, water can be put through repeated processes of purification and re-use, other essential materials can be re-cycled and effective taken to reduce pollution. Town and country planning techniques can be improved to utilise land resources.

But optimism is dampened when some of the conditions that have to be satisfied if technology is to solve the problems are considered. It will be essential to have investments on a growing scale both to produce the necessary skilled manpower and to undertake vast capital projects of ever-growing size. This capability will only be possible for large, economic units, such as large national or international companies, state corporations, or international government agencies. Moreover, these units will only be able to carry out their tasks in conditions of social and political stability. The growing importance of such stability derives, not only from the large amounts of capital required but the increasing scale, degree of concentration, complexity and vulnerability of the projects themselves: only a few enemy bombs on strike action by a small number of key workers are needed to bring the whole economy of a country to a standstill.

Social and political stability threatens to be increasingly difficult to secure. There is danger of increasing tension between countries as the result of the uneven distribution of natural resources and investment and, technological capacity. For example, the emerging crisis in oil highlights the importance of access to the world's main resources of this fuel in and around the Persian Gulf. Again, the gaps in living standards between the rich countries of the Atlantic and the under-developed countries of Africa, Asia and South America will increase international tension. Within the developed countries social and political stability is likely to continue to be threatened by the gaps between the rich and the poor, by the need to deflect more resources from consumption to investment by the pressures in favour of large-scale organisations and cost cutting that weaken the smaller units of society and so produce alienated citizens. Tensions of these kinds may impose limits to growth long before industrial expansion is stopped by lack of energy, water and raw materials or before population is stopped by malnutrition and pollution.

The urgency of the problems is underlined by two characteristics of ecological systems. One is that nature gives little warning before it delivers its blow; deleterious processes may continue with little apparent ill-effect until they reach a sudden threshold by which time it may be too late to take effective action against them. The other is the long lag between the start of corrective action and the resulting benefits. Thus because the number of mothers depends on the age structure of the population, many years may elapse before a reduction in the number of births per mother results in a reduction in the size of the population.

It is perhaps not too difficult to suggest answers in general terms to the problems presented by LQL. Thus in these terms the answer might be said to be in developing such policies as will bring about the kind of balance between man and his environment that will promote the continuity of the human species and the welfare and happiness of all the individuals comprised within it.

The need to promote continuity is inherent in the need to have quality of life in the long as well as the short-term and is as integral to human as it is to other forms of life. Without the urge to maintain itself - without what the biologists call homeostasis - no living system can exist and evolve. The urge is built into the fundamental inheritance of the individuals comprising every living system and the destiny of that system is the result of the interactions taking place between its individual members (each of which has a slightly different genetic inheritance from that of the others and each of which is struggling to maintain and reproduce itself) and an environment that offers opportunities and constraints in a diverse and changing form. The same fundamental processes apply to man but with the vital differences that, in his case, the inheritance is exosomatic as well as genetic and that he is largely conscious of the interactions taking place: not only does his body inherit the information passed on through his gene cells

but his mind has access to the vast body of information that is made available through language, writing, computers and broadcasting - information that includes knowledge of the interactions taking place between his species and the environment; and whereas for other forms of life, the achievement of continuity is largely an unconscious result of the operation of chance forces, man can consciously "assess his position and collectively plan his continuity.

That this continuity should be on a basis that promotes the welfare and happiness of all the individuals in the population is also implicit in the objective of LQL and is consistent with an optimistic view of the evolutionary process. For most forms of life continuity is fought for by the individual or by instinctive group action but man shows an evolution in the conscious concern of the individual not only for his own continuity but for that of increasingly large groups around him - the family, the extended family, the tribe, the social/ economic class, the nation, the large state, the federation or community of states and finally the species as a whole. The threats to LQL arising from the limitations of natural resources and of man's own nature that were discussed in earlier chapters cannot be resolved without this kind of extension of the area of concern. Attempts by limited groupings such as individual states or particular classes to secure their own continuity in ways that increase their own population weight, military might, economic power and standards of living can only lead to disaster in a world that is rapidly shrinking as communications improve and pressure on resources grows, and that is becoming more precarious as units of investment increase in size, complexity and vulnerability and as military weapons become more devastating. Extension of the field of concern to include the welfare and happiness of all individuals of all classes and all countries is therefore implicit in the concept of LQL. It is consistent with the optimistic view of the historic life process according to which man is moving, not up a side-turning to extinction, but along the central highway that continues through forms of unconscious, physical evolution to those of conscious, mental evolution. It accords also with the teachings of brotherly love and the extension of the caring community that form the solid core of religion.

But it is one thing to give an answer in general terms and another more difficult one, to resolve the many contradictions and paradoxes that stand in the way of specifying in any detail the new policies that are needed and that would be meaningful in current political terms. There are many different forms of quality of life, pursuit of one may be at the expense of others and therefore difficult choices have to be made. Thus material, social, cultural and spiritual values point to different kinds of action just as do the needs both to give freedom to the individual and to exercise the discipline over him on which social and economic stability and ultimately his own well being depends. In the case of some objectives - particularly material ones - their pursuit may itself create pressures on natural resources and social and economic systems that will make it



eventually self-frustrating. Again, in deciding how best to secure and maintain the social and economic stability on which investment and therefore material quality of life is dependent, it may be necessary to face the kind of dilemma that often confronts reformers - namely, that the changes required in the social and economic system (even though in this case they are ones needed to ensure the long-term stability of the system itself) may be so opposed by those who benefit from the existing order that at the obvious course of maintaining existing law and order is inadequate and the serious risk may have to be faced of disrupting that law and order although doing so could risk incurring just those ill-effects it was desired to avoid. Similar paradoxes are to be found in every field of activity. Thus although increased expenditure on health services would appear to be an obvious way of promoting health and happiness it will not necessarily do so. The most expensive health services may fail to prevent more people having to cope with serious congenital handicaps resulting from the increased use of chemicals and radioactive materials linked with the growth in national income 'needed to pay for the services. And adding to the numbers of doctors and nurses may fail to offset the ill-effects of the over eating, lack of exercise, and indulgence in stimulants and tranquilizers that accompany an increase in national income.

But if perplexities and doubts surround all attempts at formulating policy they must somehow be clarified so that the appropriate course of action may be seen. It will be best to make the attempt by looking in turn at each of the main fields in which new policies are needed and to use as Touchstone the need to promote quality of life over at least a few decades rather than just over a few years.

### Fewer people

One of the first requirements in the interest of LQL is to have fewer, rather than more, people. This will help not only to reduce the pressure on natural resources but to solve the problems of congestion and pressures on land which make it hard to maintain, let alone improve, the physical and social environment and to release a large share of financial resources for the capital investment that will be needed in increasing amounts to offset the exhaustion of low cost resources. There was a time when it could be argued with force that a growing population was needed to give impetus to economic growth and to provide a base for strong armed forces. But the possibilities opened up by regional and inter-national groupings of states and the development of methods of governmental intervention and planning in capitalist as well as socialist states have reduced the force of these arguments while the sophistication of modern industrial and military equipment puts a premium not so much on the size of the total manpower available but its physical fitness, intelligence, morale and scientific and technological capacity.

Public opinion has markedly developed during the last two decades and has already in most countries come to realise the importance of reducing the rate of growth of population. Recent Presidents of the United States have made statements and introduced policies that were politically inconceivable during the Eisenhower administration. In Britain the fears of the main political parties of alienating Catholic and other public opinion have been allayed by the change that has taken place in this opinion, and in recent years important steps have been taken to encourage family planning, to increase access to contraceptive methods and to make abortion more readily and safely available.

One of the main obstacles is the fear of individual nations and of social, religious, racial and other groups within them that reduction of their population will weaken their position in relation to that of others who do not encourage such reduction. Some developed, as well as some undeveloped countries, want bigger populations for strategic reasons. In some countries the fecundity of coloured peoples is feared by the whites and in others that of Catholics by Protestants. There are countries which have revolutionary parties which do not want to lessen the pressures that population growth and economic insufficiency exert against the established order. And some leaders of under-developed countries suspect that the population policies advocated by international bodies and by important aid-giving countries like the United States will only consolidate the grip of neo-colonialists on their political and economic systems and their natural resources. The spokesmen of the under-privileged classes and countries can also, with justice, point to the much bigger charge on natural resources that an extra American or European will impose than an extra Indian or African. There is only one way to allay such fears. Policies to control population must not differentiate between religious, racial, linguistic or social groupings but apply equally to all. They should also be pursued by neighbouring states and made common to regional groupings and indeed, if possible, made worldwide in application.

The only exception to this principle is that priority might be given to those areas of the world and to those parts of countries where quality of life is most dangerously and obviously prejudiced by population growth. There are countries, cities and urban and rural slums where large families, unemployment, poverty and squalor are all interconnected and a simultaneous attack is needed on all of them if quality of life is to be improved. On the other hand there are other countries or parts of countries where natural resources are rich and where a scanty population could with benefit be increased. Granted the necessary mobility and the drastic political changes on which this would be dependent, movements of capital and population could iron out such discrepancies but at best they could only do so over a long period of time. It would be right therefore to concentrate the efforts to reduce population in the first place on the countries and parts of countries in the first category.

The United Kingdom should give a lead in controlling population growth. Compared with most countries of the world it has a large and dense population, great conurbation problems and is heavily dependent on imported food, fuel, timber, ores and other essential supplies. Through membership of the European Community it is well placed to persuade one of the world's largest, richest and most resource-consuming population groupings to adopt a general policy of population control. Stabilisation, and indeed reduction, of population in a group of states with so much present and potential economic, defence and political strength is possible without in any way weakening the group's strategic position in relation to that of other groups. Britain's links with other countries through the Commonwealth and the United Nations puts it also in a position to give a world-wide lead in improving methods of population control and in implementing them on a basis that does not discriminate on racial, linguistic or social grounds.

Because quality of life in these islands, particularly in the more densely occupied parts of them, could be expected to be higher with a smaller population than the present, it would be right to have as a long term objective first stabilisation and then reduction of the population. Economic and other policies should fit in with this so that it does not lead to economic stagnation or defence weakness that would threaten quality of life in other ways.

To stabilise and then strongly reduce the population of Britain the appropriate target is the two-child family. Mortality rates here are relatively low and because of the relatively high birth-rates of the first twenty post-war years there will for some time be a comparatively large proportion of people in the fertile age groups in the population. A completed family of no more than two children on average is needed first to stabilize the total size of the population and then to bring about a slow reduction. This means that the decline in the birth rate that has been apparent since 1964 should be maintained. And it will be a long time before quality of life considerations are likely to point to a need for larger families to reverse the trend. The same objective of stabilisation followed by slow reduction would be appropriate for other countries of the world although because of their different age structures and mortality and marriage rates, different targets in terms of size of completed family, will be appropriate for them.

There are important factors which would work naturally - though not beneficently - to reduce family size. Population congestion itself resulting for instance in more small flats and high-rise buildings, greater economic pressures resulting in more employment of married women, high interest rates making houses difficult to obtain, and poorer nutrition of mother and child and more pollution resulting in more still births and higher infant mortality are such factors. But these are the kinds of harsh natural controls on population which it is desirable to avoid.

There are other factors of a more acceptable kind at work. These include the development of more efficient and acceptable contraceptive devices and abortifacient methods. They also include changes in attitude. Women want more personal freedom and there is growing awareness of the tragedy of the child whose birth has not been wanted by its parents - a tragedy both for the child and for society because lack of loving care in childhood is a major cause of mental and physical ill-health, delinquency and social dependency.

Unfortunately, the latter factors are unlikely to be strong enough to reduce average family size sufficiently in the kind of continuing way that is desirable. Most parents have preferences (particularly for having at least one surviving son) that lead them to want to have more than two children. In countries like Britain this natural desire leads to a preferred size nearer three than two while in countries like India with high mortality rates and little other insurance for old age it leads to a preferred size of six or more children. Furthermore success in improving quality of life by improving food supplies and housing, reducing mortality, infertility and congenital disease and eliminating social and international tensions all make it easier for parents to achieve their individually preferred family sizes. Finally there are significant numbers of people who either for religious or similar reasons, or because they have an irresponsible attitude towards parenthood are unwilling to limit their families at all.

The stabilisation and slow reduction of the size of the population will, therefore, require strong governmental policies directed to this end although these should aim at securing the necessary overall end-result with the minimum of interference with individual families and personal convictions and liberties. The two most obvious kinds of measures are those directed at encouraging general public acceptance on the two-child family as the socially desirable norm and at making it easier for people to achieve this norm. For the former to be effective will require a new attitude to be implanted before young people reach the age of marriage, and this means that the nature of the population problem and the need for, and means of, family planning should be taught to young people before they leave school. These attitudes will also need to be reinforced thereafter by the health and social services, voluntary organisations and the political and other agencies that influence public opinion. The development of more convenient and effective contraceptive methods and administrative measures to make these, and the appropriate advice on their use, more readily available will be the most straightforward way of helping parents to limit their families. But because prevention of conception will continue to be fallible it will also be necessary to develop acceptable and safe methods for very early interruption of foetal development such as the pill to be taken immediately after intercourse.

Also consistent with the need to minimise interference with individuals would be financial inducements to have small families rather than large. The taxation and

social service systems should be altered in this direction in keeping with the need for individual parental decisions to have another child to have regard as far as possible to the full social costs of extra children. Thus substantial allowances might be paid for the first and second child only, and they should be paid to the mothers provided they devote themselves to the care of their children until the latter are old enough to go to school and while they are in particular need of loving home care.

This leaves the serious and difficult problem of the individual parents who through irresponsibility continue to have large families. It is serious because such families (though not of course all of them) tend to account for a substantial part of the socially, physically and mentally disadvantaged part of the population. Although many large families are able to offer all their members a high quality of life and do not constitute a serious problem, in others the children suffer severely, and often irremediably, from the inadequacies of irresponsible parents - from the latter's poor health, low incomes, ignorance, drunkenness and sometimes (as in the sad cases of battered babies) from their cruelty. Many of the parents who are least able to care for their children are also those least inclined to accept the self-discipline of family planning.

The problem of dealing with such irresponsible families is difficult because it raises in an acute form the question of the freedom of the individual. If such parents will not discipline themselves, should society impose a discipline on them in the interests of the quality of life of their children? Such a discipline could only be contemplated as a last resort. The first attack must be by concentrating family planning, social service, re-housing and environment, improving efforts on the localities and the families whose need for these is greatest. If such efforts prove unsuccessful then it may indeed become necessary in the decades ahead to consider the compulsory sterilisation of parents who, through repeated difficulties with the social services, have shown their inability to care for their children. In a world striving to maintain quality of life against the pressures of population growth it is inevitable that priorities should shift in favour of the well-being of the new-born and against the unlimited freedom to procreate of parents who not only cannot provide their children with that well-being but actually mar them for life. That harsh reality must not however be reflected in an equally harsh treatment of the irresponsible parents, because the latter are themselves likely to have been the product of unhappy circumstances beyond their own control. They must be treated as considerately and humanely as is consistent with ensuring quality of life for their children.

### Healthier people

Turning to the need to have healthier people, there is, to begin with, the threat presented by congenital handicaps. There are many measures for dealing with this threat which do not raise serious ethical or practical difficulties. Medicine,

nursing and education can be expected to continue making a major contribution through better care of the foetus, safer deliveries of babies, new drugs and diets for those suffering from biochemical abnormalities, new surgical techniques, improved prosthetic devices and more and better facilities for the care, education and training of the handicapped. Fuller screening of pregnant women, better diagnosis of abnormalities in the foetus coupled with readily available and efficient abortion procedures will also make an increasingly powerful contribution. Furthermore, it should be possible to educate pregnant women more fully about the dangers of taking drugs and stimulants or eating chemically treated and inadequate foods. Such advances do not pose major ethical problems; the main difficulty is lack of resources and priority will have to be given to make the latter available on a bigger scale than at present.

Action on these lines will not however be enough. Prosthetic devices, expensive and unpleasant diets, special care and education will not enable the highly handicapped to lead a happy life. Nor will it prevent an increase in their number; indeed some of the measures just described will tend to increase the incidence of genetic abnormalities; and as chemicals and radioactivity find their way in increasing amounts into human systems via food, water and air, as well as directly via drugs and stimulants, deleterious mutations, chromosome defects and damage to foetuses may increase. Diagnosis may not be early enough for abortion to be safe. Some parents may prefer to take the risk that their children will be handicapped. During the decades immediately ahead, therefore, a new medical and social ethic will be needed in relation to congenital abnormality. Should every effort be made to keep alive the baby that is born with a serious abnormality? Should genetic fitness be taken into account in marriages as religion, race and wealth long have been? Should parents liable to have defective children be free to take the risk of having them? What voice should the parents have in the decision whether to attempt heroic surgery on the seriously abnormal baby? These questions raise serious moral and practical issues. If the sanctity of all life is not to be the main guide for the medical profession, what should take its place? If every effort is not made to save life then an essential impetus to medical advance and care will be prejudiced and lives will be lost that could have been saved. How far can regard be had to genetic defects bearing in mind that everyone is a carrier of some defect or other? If individuals are not to be free to decide on such vital personal matters as marriage and the bearing of children, who is to take the responsibility from them and under what safeguards? These vital and controversial questions which have so far been little discussed in public and which have been avoided by politicians are not questions to be answered lightly and the first step needed is to have them examined by a high level commission of biologists, doctors and religious leaders.

Although congenital handicap causes great suffering to a small minority and places a big burden on others, more important for general quality of life is the extent to which the health and other services promote the physical and mental fitness of the mass of the population. It has already been agreed that increased expenditure on existing lines is not necessarily the best way of promoting this fitness. Very large increases in such expenditure largely aimed at giving a short added spell of life to people suffering from serious illnesses may not prevent a general decline in the health of the population as a whole. The effort to extend the normal span of life is costly in the case of resources, and is at the expense of efforts in other directions; it tends to increase the quantity of life and in conditions of long-term shortage of resources this will be at the expense of quality. In any case there are certainly immediate limits to total national income and these and the needs of other services mean that the health services cannot hope to continue to have rapid increases in the total resources made available to them. Again, there is no solution to be found in seeking to stretch these resources further (as has to some extent been done in recent years) by underpaying health workers in comparison with other workers: strikes and the eventual disintegration of the services are the inevitable result of doing that. Nor is there any answer to be found in extending private as opposed to the national services: on the contrary such a shift would be likely to increase the concentration of effort on postponing death for a small number and to absorb more resources without yielding commensurate gains in the shape of general health.

Although in these matters a layman must express his opinions with diffidence, the long term promotion of physical and mental health under conditions of limited resources appears to call for a radical reappraisal both of the direction of effort within the health services and of the contribution that can be made by other means. Taking the second of these first, healthier living habits as regards eating, drinking, exercise, avoidance of drugs and stimulants, a better care of expectant mothers and babies and reduction in the risk of injuries can be largely and effectively promoted outside the health services proper. Heavier taxation to reduce cigarette smoking and alcohol consumption, and stronger legislation against food adulteration, drug taking, excessive speeds and driving by accident-prone people are alternatives to providing more hospital facilities for removing cancerous lungs, treating alcoholics and drug addicts and repairing the bodies broken in traffic accidents. The free or subsidised supply of key foods to expectant mothers and babies and more thorough health education of children are alternatives to dealing with more sickness. Again increasing the incentive to stay at work rather than to go off sick is an alternative to taking the time of general practitioners in issuing certificates and could also reduce the large and fast growing cost of sickness and injury absence to the economy.

Inside the health services corresponding changes are needed so that, within the limits of the resources that can be made available to them, they can make the biggest contribution possible to the health of the mass of the population. This points to a change in research priorities in favour of tackling the common diseases like influenza, bronchitis and rheumatism which account for the bulk of illness at all ages rather than concentrating resources on the degenerative diseases that are associated mainly with old age. Careful cost-benefit analyses of the returns by different approaches to the objective of improved general health should provide the basis for health policy.

Again, to promote general good health medical knowledge should be more widely diffused. There is a natural tendency as medicine becomes more scientific and specialised for the search for knowledge to become the dominating interest and for the knowledge acquired to become increasingly confined to the profession and indeed to limited expert circles within it. Substantial resources must continue to go to support the effort at the exciting frontiers of advance and increasing specialisation is an unavoidable part of development. But side by side with this, major efforts are also needed to spread the knowledge gained as widely and rapidly as possible amongst general medical practitioners

Moreover, knowledge of the basic rules of health and of simple efficacious remedies for minor ailments should be spread more thoroughly through the whole population. This should help to reduce uninformed self-medication based on the confusing mass of heavily advertised, commercially-motivated and expensive pharmaceutical products, to avoid many unnecessary calls on the health services and to achieve a general raising of fitness standards.

Medical knowledge should also be used more fully outside the health services. The problems of LQL are largely biological in character and as the experts in human biology, doctors should have an important role in policy making in such fields as town and country planning, pollution control, soil conservation, public health, the social services and education. At present the profession is trained particularly for the treatment of sickness and injury and virtually the entire output of the medical schools goes into that field of activity. From this point of view the need for increased specialisation in dealing with sickness and injury, the reorganisation of the social services on the lines recommended by the Seebom Committee and the weakening of the links with local government resulting from the recent reorganisation of the health services carry dangers that need to be corrected for example by making the health services responsible to directly elected regional assemblies. The output of doctors also needs to be increased and the training, at least for some of them, widened to cover the whole field of human biology including ecology. This extension will produce valuable recruits for other fields of work and provision should be made



to recruit them. The extension will also help the profession to develop the new philosophies and policies that it needs to tackle the problems of human ecology.

#### Stricter measures against pollution

It is not sensible to spend large sums of money on healing people and at the same time allow them to be poisoned, and if large resources are to be spent on the health services, the return on this expenditure in the shape of improved health should not be negated by more pollution of air, water, land and food. Reduction of population especially in the large conurbations will help to reduce the risk of this. But its effect will be small because the main sources of pollution lie in the expanding energy consumption, raw material processing and use of chemicals that are intrinsic to economic growth. And, because the pressures for some growth are irresistible and justified by the need to improve material standards of living for many people, determined efforts will be needed over the coming decades to combat the consequential risks to health.

These efforts involve, in the first place, identification and understanding. The substances that cause, or are likely to cause, damage and their origins have to be identified and the ways in which they interact with the environment have to be understood before the best remedial action can be taken. Because the agents themselves and the complex interactions in which they are involved are only imperfectly understood at present and, because information about the incidence of pollution is limited, bigger research, survey and inspection efforts are needed. These efforts are required at international and national level because the air and water circulation systems that spread pollution operate globally and because particular states have special problems of their own, and must in any case be involved in whatever remedial action is needed. The new United Nations Environmental Programme, with its headquarters in Nairobi, which was one of the results of the 1972 Stockholm Conference is an important step forward in the international context, while the activities of the public health authorities, the Alkali Inspectorate and the National Environment Research Council are of key significance in the local British context. The responsibilities, power and resources of all these organisations will need to be increased.

In the second place more effective prohibitions and controls, including heavy penalties and the closure of offending plants, will be required to deal with particularly dangerous substances. In some cases - as for instance with certain drugs, pesticides or herbicides that have been found to be dangerous and for which alternatives exist - complete prohibition of production will be appropriate. In other cases (and with scientific and industrial progress there will continue to be more of them) it will not be possible to prohibit production without causing serious economic damage. Substances like mercury, lead and cyanide, explosives, corrosive acids, toxic gases, and above all radioactive materials are essential for industrial purposes and some will become increasingly so. Nuclear

power stations will have to be built in increasing numbers to offset the decline in fossil fuel production although release of their radioactive products would be catastrophic for large areas in their vicinity. Offshore oil wells will have to be sunk in increasing numbers in areas like the North Sea although the consequences of a blow-out or leak would also be very serious. Unless a serious reduction in material standards of living is accepted it will not be possible to do without such installations. Nor will it be possible to reduce the risk of accidents to them to zero. There will always remain a risk - for instance, of earth tremors, aeroplane crashes, acts of sabotage or war or simple incompetence - with which we shall have to live and through which perhaps die. But substantial expenditure and stringent controls will be justified to keep these risks as small as possible.

Noise, which is also linked with economic growth and which can be as deleterious to health as poisonous substances, will also need to be controlled by heavier prohibitions and penalties and the development of quieter processes given more encouragement.

Substantial expenditures will be needed thirdly on treatment and disposal installations. More sulphur-removal equipment will need to be installed at power stations and oil refineries. Water and sewage treatment will increasingly have to be upgraded to include oxygenation treatment, the use of lime to remove phosphorous, the use of stripping towers to blow out nitrogen and of activated carbon to remove remaining chemicals. Disposal of wastes in quarries and mines will have to be more strictly controlled and increasingly displaced by chemical treatment, incineration and pyrolysis and perhaps eventually by fusion processes.

Fourthly, ways will have to be developed to use safer products and processes. For instance, the use of farm effluents as natural fertilisers should be encouraged by subsidies, warm water discharges should be used for fish production and chemical fertilisers pesticides and herbicides should be increasingly replaced by biological forms of control, and the development of new strains of plants. Petrol and diesel engines should be made cleaner and where possible replaced by electric motors or other less-polluting sources of power.

All of these measures will, of course, cost money and therefore be at the expense of the production of normal consumer goods and services, but it will become increasingly apparent that there is little advantage in having more cars and other consumer goods, if the buyers choke for lack of clean air, contract cholera through drinking contaminated water or poison themselves by eating unfit food. Studies have been made which suggest that action on the lines indicated will not involve more than a modest percentage of total national product. Moreover, granted the appropriate pricing and taxation systems, they

should not involve a reduction in economic activity and employment but only changes in the direction of effort: changes that will be in the interest of the most basic of all the ingredients of quality of life, namely, good health.

### Effective land-use planning

Similarly, efforts will be needed to increase the effectiveness of land-use planning. Stabilisation and reduction of population especially in the big urban areas will make a more rapid contribution to this than it will to reduction of pollution because it will diminish one of the main pressures that force the planning authorities either to increase densities by high-rise building, or to extend the built-up areas, that push up land values especially in the city centres and that increase the length of journeys to work and give rise to insoluble problems of traffic and other congestion. But, again, as in the case of pollution, population stabilisation will not provide of a complete answer. For the great majority of the population there is need to reduce densities within, and the total size of, the big towns; to locate homes, places of work, and social and community facilities more conveniently located in relation to each other; to improve travelling facilities within the built-up areas and access to the countryside; and to give urban dwellers more of 'the sound of water and the scent of flowers.

The problems of meeting these needs are theoretically soluble, because without increasing the present size of the building industry it would be possible to rebuild all urban areas in the space of about half a century, and if they can be rebuilt they can also be re-planned without any major dislocation in the economy.

But in practice there are major problems to overcome. To begin with there is the organisational problem. Rebuilding is determined by a multitude of independent decisions and the properties which at any one time their owners are ready to redevelop are scattered over the built-up areas, so that comprehensive rebuilding of anyone part of these areas is normally difficult to achieve without costly and unpopular demolition of properties that their owners want to keep. The location of industry and housing, the layout of transport systems and the operation of planning controls are in the hands of separate authorities and the real power of the planning authorities is limited. Considerations such as unemployment and the anxiety of firms to minimise their operating costs tend to determine the location of industry rather than the wishes of the planners. Similarly, the cost advantages of having large contracts and of building on flat and immediately available land tend to determine the location of housing. The development of transport is in the hands of the transport authorities and their ability to plan is conditioned by the lower cost and greater convenience of road compared with rail and of private compared with public transport. The planning authorities themselves remain numerous despite the reduction brought about by

local government reorganisation; they are particularly weak at regional level and there is too much detailed control by the centre. On the other hand, increasing the power and efficiency of the planning authorities risks reducing the opportunities for consultation and participation with the many interests involved including the individual property owner whose interests are vitally affected by planning decisions.

Then, there are the financial difficulties fanned by inflation, land values have everywhere reached a very high level and land being strictly limited in extent these values must be expected to rise still further. City centres are particularly vulnerable and in many key areas it may only be economically possible to build very high rental properties which may not be of the kind that the planners would like. The rateable values and incomes of local authorities are so profoundly affected by the location of new development that financial considerations tend to overwhelm good planning. Again, the decisions of the authorities about the land to be or not to be developed bring major capital gains to some land owners and losses to others. Unless adequate compensation can be paid to the losers, opposition to planning decisions can be insuperable and, if the cost of compensating them cannot be met by extracting from the gainers a part of the betterment of their assets, the cost of effective planning may be too great to be supportable by the public. Since the Uthwatt Commission reported on this compensation and betterment problem big efforts have been made to solve it - notably by the 1947 Town and Country Planning Act and the short-lived Land Commission set up in 1967 - but these efforts have so far failed.

Overcoming these organisational and financial obstacles to town and country planning remains one of the greatest of the administrative tasks of this century. It involves resolving such inherent contradictions as those between efficient planning and increased participation and between pursuing the general good (which points to increased state intervention) and permitting greater freedom to the individual (which means that he should be left free to enjoy his own property). Solution of the organisation problem will inevitably require an increase in the power of the planners. In particular planners should be given responsibilities for the location of industry and the development of transport and planning should be strengthened at regional level. To balance this extension of officialdom the regional planners should be made accountable to new elected councils at that level and the planners at the existing local authority levels should be required to develop further their consultations with the local interests affected by their plans.

Solution of the financial problems requires yet another effort to devise a compensation and betterment scheme. If such a scheme cannot be made effective within the framework of private ownership of land, then more drastic solutions involving more public ownership (perhaps through the conversion of freeholds to leaseholders) will have to be considered. Finding the best solution

to this complex and highly charged problem is a major responsibility for the political parties and the civil service.

### Reshaping economic activity

For LQL general economic policies must be reshaped to give improvement of the physical and social environment and security against war and internal strife greater priority over the short-term (though not necessarily long-term) maximisation of the supply of goods and services. As shown in Chapters 2 and 3 the overwhelming priority at present given to immediate improvement in material standards is a principal cause of deterioration in the physical and social environment, strain on natural resources and political tension. It is also self-destructive, being the main threat to sustained improvement in material standards themselves. That sustained improvement is needed because the many aspects of quality of life including the material - there being far too many people in want for the latter not to be regarded a major objective. There is no inconsistency between seeking to maximise the supply of goods and services over the long term and accepting the need for restraint in the short term so that more enduring relationships are established both between man and the rest of nature and between man and man.

Before considering in positive terms what kinds of economic policies would best achieve these multiple objectives, comment may be made on certain policies that have been advocated with some plausibility but cannot in fact be supported.

It has been argued that it is scientific and technological development that has been destructive of human values and that a return should be made to simpler methods. The argument appears to have some historical justification and has appeal because there is much that is wholesome and attractive in the simpler ways of life. But the stream of life normally flows only in one direction and certainly in this case there is no practical possibility of reversing it. The circumstances in which it was possible for an entire population to depend on earlier technologies have gone for good. Not only are modern populations much greater and concentrated in far larger cities than previous ones but the natural resources which the earlier technologies could exploit have largely gone. The easily accessible resources of water energy, raw materials and sites for waste disposal have long been exploited. The history of science and technology has been largely that of response to two kinds of overwhelming need - for armaments and for natural resources. The importance of the second is demonstrated by, for example, the inventions required to dig coal from continually greater depths or the impetus to genetic and other biological studies given by the need to produce more food. There is no reason to doubt that the capacity of scientists and engineers will continue to be fully stretched for similar reasons in future. It may be a possibility for a few to enjoy wood fires, horses

and compost-grown food but it will not be possible for the energy industries to rely on forestry nor the agricultural to go back to animal power and natural manures. Many people would benefit in health if more use was made of the bicycle but the essential problem of the transport industry will be to develop cars, buses, lorries, tractors and trains that will carry more traffic while creating less pollution and using less hydrocarbon fuels, and their problems will be solved not going back to earlier kinds of vehicle but by developing new ones. The metallurgical industries cannot return to techniques that were only satisfactory when ores were rich and charcoal or coke cheap. They must continue to develop more advanced methods enabling still leaner and more inaccessible ores to be economically mined or unlocking entirely new resources such as those of manganese, cobalt, nickel and copper in the nodular materials lying deep on ocean floors. Thus there is no escape by stopping scientific and technological advance: on the contrary, though its direction will need continuously to change, the general advance itself will need to be accelerated.

Similarly it is not possible to sustain the case made by some writers for a zero rate of economic growth even though this would seem to do much more to postpone the exhaustion of natural resources than a policy of zero population growth. In a world in which two-thirds of the total population is inadequately fed, housed and clothed and in which even the richest countries have much poverty, a policy of zero economic growth would mean either leaving the poor in that state or making a massive reduction in the standard of living of others by redistribution of income. Either of these would increase the risks of internal strife and war. Zero economic growth could also hinder the reduction of population growth because fertility is particularly high amongst illiterate populations living in primitive conditions and with few employment opportunities for women and no better provision for old age than a large family. Finally, economic systems are flexible and can be adjusted by taxes, duties and subsidies so that growth could proceed on the basis of a new balance between different industries and different processes that took more into account the need to conserve certain resources and to observe new social priorities. The very changes required to meet such needs could indeed give new impetus to a flagging economy - for instance by requiring earlier replacement of industrial installations in the interest of better use of fuel raw materials and waste products or by speeding up the rebuilding of towns and villages in the interests of an improved physical environment. As with science and technology, what is wanted is not to stop economic development but to ensure that it proceeds in those directions that are in the best long-term interest.

With that interest in mind the present economic system has some advantages that are worth retaining and others that need to be remedied. The system's ability to adjust rapidly to changes in relative costs and alterations in consumer preferences without requiring time-consuming and initiative-destroying control

by central offices is an advantage, and so is the discipline that the need to make a profit rather than a loss imposes on the use of resources. On the other hand, the system takes into account only the costs that fall directly on individual businesses and not the total costs falling on society and, while this is justifiable from the point of view of the individual business that has to compete with other businesses trying to minimise their costs, it results in accumulating social costs through congestion, pollution and exhaustion of resources. Again the system only takes into account the present and immediate future and not the likely long-term position and, while this can be justified by the uncertainties attaching to the future and the need to compete with firms who minimise their costs on the basis of the cheapest supplies currently available it makes the economy vulnerable to factors (like those which erupted in the 1973 oil crisis) which are at work largely unknown to the individual firm but which can suddenly result in serious damage against which no early remedy is possible because the appropriate countermeasures have not been prepared in time. Finally, the economic system has the weakness of artificially stimulating by design gimmicks, sophisticated advertising and credit financing, the sale and production of resource-expensive but not very necessary goods. The powerfully-engined, high-octane-fuelled and short-lived motor car or the expensively-packaged-and-advertised pharmaceutical of little intrinsic worth are examples of this.

To retain these advantages and overcome the disadvantages, central government must concentrate on those economic functions that it alone can discharge and use machinery that encourages initiative and the drive elsewhere in the economy. Accordingly, central planning should as far as possible use only financial and legislative methods. Monetary controls, taxation, duties, subsidies, special charges and prohibitions should be used rather than physical controls for the purpose of influencing the general level of activity and the balance of payments and of furthering government policies in other respects. Legislation should operate effectively against monopolies, cartels and restrictive trade practices, and the size of individual businesses, whether they be in private or public ownership should be related to that required for efficient capital investment in individual projects so that financial accountability and managerial decision-taking can be as immediate and direct as possible. On that foundation a super structure can be added to provide for cooperative action for such purposes as research and development and wage negotiations but the ambitions of the central offices so created will need to be combatted continuously.

Having the right kind of economic machinery, the other major requirement is that Governmental influence should be directed at what is in the long-term economic interest and that means a conservationist approach to natural resources putting emphasis on avoidance of waste and pollution and on the production of essential rather than non-essential goods and services. Thus

treatable forms of pollution should be subjected to charges to cover the cost of treatment and dangerous, untreatable forms prohibited. The use of industrial, agricultural and domestic wastes and increased efficiency in the use of fuel and raw materials should be encouraged. Non-essential activities - particularly those injurious to health - should be discriminated against. The home production of such basic commodities as food and timber should be sedulously fostered.

Because no economy can function properly unless it provides incentives for effort, carries confidence and generates resources for investment, it is essential to bring inflation under control. Experience has shown the dangers of pursuing financial and monetary policies that have maximum economic growth as their main objective and relying on statutory controls of incomes and prices to stop inflation. The former creates unrealistic demands and the latter reduces the initiative, flexibility and capacity of the system to meet them and also bring the Government into destructive confrontation with trade union and business and consumer interests that further weaken confidence.

The root of this, as of much other trouble, is the excessive emphasis placed on short-term improvement in material standards of living relative to that placed on the indispensable resources. In this case the relevant resources are not so much those of fuel and raw materials (which impose long - rather than short - term constraints) as those of readiness to work hard for the sake of the desired increase in real incomes and to forego immediate consumption for the sake of the necessary investment. In competing for electoral support the political parties are tempted to encourage expectations of increased standards of living and improved public services without sufficiently spelling out their cost in effort and abstinence. On attaining power they give fast growth of the national income a high priority and criticize each others' performance in office largely on that criterion. They follow financial policies that risk creating inflation and they find it easier to allow substantial increases in money wages and public expenditures and to let rising prices reduce the real value of these than to insist on more realistic and unpopular increases. The only cure, short of the drastic ones enforced by eventual economic breakdown, is to have franker and more honest policies.

Another aspect of economic activity is its geographical distribution which is important in relation to the best use of resources (both those of nature and those of men and existing capital), the improvement of the physical environment (which depends critically on the location of industry), the control of inflation (which has its main foci of infection in those areas where demand is greatest) and social and political stability (which is particularly vulnerable if unemployment and poverty are concentrated.) Changes in industrial structure and competitiveness make it likely that serious geographical problems will continue to arise and to require effective solutions through differential taxation,



grants control of industrial location, land-use planning and the provision of factories, houses and services.

In improving these methods of solving the geographical problems, an important aim should be to encourage local initiative and self-help as much as possible. This will not only lighten the task of providing new industry but ensure that the new industries are well-rooted in the localities both socially and in relation to local needs and resources. Like everything else, modern industry carries within it the potential seeds of its own destruction: in its case the indifference if not hostility of the ordinary citizen to business enterprise even though his prosperity depends on this. Although for technological reasons much industrial development involves too big investment to be within reach of local initiative, where smaller investments are practicable local individuals or groups of them should be encouraged to make them and the educational system as well as the banks and governmental agencies should play their part in giving this encouragement.

For its international economic policies Britain needs to establish a new balance between self-sufficiency and inter-dependence. By pursuing free-trade policies directed at gaining access to overseas markets for manufacturers and importing raw materials and foodstuffs cheaply, it was possible in a period of history when we had natural resource, financial and technological advantages over other countries to increase population and living standards far beyond what the natural resources could continue to support. But our position has become highly vulnerable now that other countries have developed competitive industries, world demands for fuel, raw materials and foodstuffs have greatly increased and the supplying countries have become sophisticated about the amounts which they are prepared to produce and the prices at which they are willing to release them. Steady encouragement should be given to industries like agriculture and forestry and particularly industries which offer substitutes for key imports and whose comparative costs are not too disadvantageous.

But the best efforts that can be made in that direction, coupled though they be with a successful programme to stabilize and reduce the population and moderate the rate of economic activity, will be wholly inadequate to safeguard the vital interests of the population. Their results will be too slow and the degree of dependence on imports is too great for a solution on these lines to work. Side-by-side with increasing self-sufficiency, therefore, policies to strengthen bonds with other countries, safeguard the flow of international trade and maintain the stability of the international monetary system are essential.

In pursuing both of these, only apparently contradictory, objectives British membership of the European Community holds the promise of being of great value. If the community can become an economic financial and political reality, it can vastly ease the task of achieving a measure of self-sufficiency, particularly

in food supplies and at the same time be a major force in protecting the general freedom of world trade and the links with other countries producing the oil, timber, ores, etc. on which Western Europe as a whole will remain dependent. These advantages justify the loss of a degree of sovereignty involved in making the community a reality.

As in other fields, international economic policy must not, however, be based on narrow self-interest; the longer term the point of view taken, the more important altruism becomes. All the countries of the world are interlinked and the economic health of every country whether it be weak or strong and far or near must in a rapidly shrinking world be a matter of concern to all. Thus the crisis threatening a country like Bangladesh or the long-term problems of a country like Japan may directly or indirectly and sooner or later affect Britain profoundly. Economic policy must provide therefore for help to be given to other countries. Such help could take many forms and some of these, including some forms of aid without strings, could be worthless. The essential point is that in international affairs, as in other nearer ones, there needs to be a generous measure of selflessness, of genuine readiness to understand and care for the interests of others even though this may not appear to be in our most immediate interest and even though it may mean giving up a measure of independence to world agencies.

#### Developing the social and constitutional structure

For much the same reasons that long-term economic objectives require a strengthening of the smallest and the largest units, so do social and political requirements. Just as economic efficiency requires that individual undertakings be small enough for managerial and financial accountability to be direct so does the need to give the individual personal attention and constructive opportunities for self expression require the strengthening of the small social units forming the immediate environment of the individual. Just as the solution to the major economic problems facing Britain and other countries requires the development of more effective machinery at communities of states and of world organisations, so does the need to harmonise the interests of minority and majority groupings and of the more- and less-well off areas and classes require the strengthening of constitutional structures at regional, national and international level. One of the principles of ecology is that of competitive exclusion - that is, the tendency as resources become limited in supply for a single species or group to become dominant and to move other species or groups either on to other resources or to extinction. To escape the operation of the same harsh principle - and indeed because of its terrible weapons to avoid complete extinction - the human race is now faced with an urgent need to strengthen its social and constitutional fabric.

Nor does the urgency of this need require to be justified in cataclysmic terms: a shift in priorities from rapid economic growth to rapid improvement of the social (as well as the physical) environment is justified by less extreme considerations. Continued long-term growth in the per capita supply of goods and services will be better promoted by aiming at a moderate rate of economic growth than at a fast one and so something other than the fastest rate of economic growth is needed as objective. And at least in countries like the United States and Britain the loss in quality of life arising from increasing alienation and violence is already apparent, and being realised to call for this shift in objectives. A percent or two faster increase in real income is hardly worth getting at the price of a less happy life at home and at work to say nothing of a bigger risk of being mugged or bombed.

The social unit that contributes most to quality of life and which therefore particularly needs support is the family, which is the most ubiquitous and natural of all social units, the one in which the individual spends more time than in any other and the one that most influences the personality of the growing child. The family should be helped to provide a stable and loving environment for its young and the economic pressures on the mothers of young children to go out to work all day should be reduced. Again because it can provide a happier environment (as well as a less costly one) than an institution, the family should be helped to look after those of its members who are handicapped by illness and age. This help can be given by modifying taxation, social security systems, employment practices and housing policies to help parents who have dependents and can look after them properly.

Those parents who cannot look after their children properly are a serious problem. For LQL there should be fewer children and all children should be well looked after, but - as many cases of battered babies show - some parents grossly contravene both of these requirements. Inherited moral values have stressed individual freedom and left them free to have many children. Local authorities (for cost and other reasons) are reluctant to take their children into public care and in accordance with the general principle that social security should go where the immediate needs are greatest they receive substantial public assistance. To discontinue the assistance would only worsen the conditions of life of the children and to take the latter into public care would still not compensate for their loss of a happy home upbringing. There is left only the need referred to earlier, when discussing the population problem, of facing squarely the question of how best to prevent such parents from having many children.

The other small units forming the social environment of the young are the schools colleges and the community of the immediate neighbourhood and in all of these size is critical because with greater size go remoteness, difficulties of communication and depersonalization of human relationships. Schools and

colleges should be small enough for strong links to be made between individual teachers and students and between teachers and parents. The economic advantages of the large uniform housing estate should be foregone in favour of smaller diversified units with their own shopping, educational, social, sports, cultural and religious facilities.

### Industrial re-organisation

The factory, mine and office are key social, as well as economic, units because it is there that the adult spends the greatest part of his effective time and it is through his work that he has the best chance of finding happiness through self expression, constructive effort and cooperation with his fellows. Providing these opportunities is deeply in the economic and social interests.

Some of the ways in which the opportunities can be given are fairly straightforward. Making businesses small enough for managerial and financial responsibility to be direct and immediate is one. Others are to improve management selection and training so as to eliminate the autocratic boss-centred manager and to develop consultative machinery and open methods of management. The creation of semi-autonomous task forces or work groups and the restructuring of jobs can remove harmful divisions, reduce the amount of monotonous work and give more satisfying objectives and ranges of activity. Other ways of eliminating unnecessary differences between weekly paid and salaried staff can also promote cooperation.

But more radical and difficult changes than these are required in the structure of industrial undertakings. To gain the full cooperation of all employees better ways need to be found for reconciling the conflicting interests of investors, management, workers and trade unions. Altering the pattern of ownership so that all employees are involved with the investors in the undertaking's gains through employee shareholdings, profit sharing or co-partnership schemes is one method. Another is worker participation in the central policy control of the undertaking - either indirectly by appointing as board members people like retired trade union leaders who are familiar with the problems of the employees or, directly, by appointing elected representatives of the employees or nominees of their trade unions. Such changes present difficulties. For instance with the potential gains from shareholdings so too potential losses, and the employees may not be willing to run the risk of the latter. Again, for most undertakings net profits would be very small indeed if distributed between employees as well as investors; the latter could easily be discouraged from committing their money while the former could find their own profit too small to give them any significantly greater incentive. More serious still is the fear of the trade unions that they would lose their strength if their members came to give their primary loyalty to the enterprise and the fear of investors and management that the enterprise would be destroyed if directors involved in major decisions of policy

had their primary loyalty not to the enterprise itself but to a section of the employees interested mainly in their immediate earnings and hours of work or a trade union headquarters interested mainly in the size of its membership and not at all with either the return on the capital invested in the enterprise or the competitiveness of its products.

These difficulties have to be resolved if the malaise that has increasingly affected British industry in recent decades is to be removed and this calls for drastic rethinking by industrialists, trade unionists and politicians. In the long term interests of all concerned it is essential to reorganise both nationalised and private industries in such a way that individual undertakings deserve, and so get, the loyalty of all their employees, earn a reasonable return on the capital invested in them, and can adjust readily both to changing technological and marketing requirements and the broad policy objectives of government. No single blue-print whether drafted by a liberal reformer or a socialist radical, is likely to suit all the diverse and changing circumstances involved but some of the elements in a possible solution would seem to be the following. The essential units carrying separate managerial and financial responsibility should not be larger than is appropriate to the scale of investment required for technological and economic reasons. All employees should have a significant financial interest in the profitability of the undertaking. The directing board should include elected representatives of the employees. There may also be advantage in including representatives of the undertaking's main customers; certainly this would be a better and more effective way of reflecting this important interest than the consumer councils that now give their advice to the nationalised industries and these representatives could also help to reconcile conflict between investors and employees, interests. But the new representation should not be such as to prejudice the board's main responsibility of promoting its sales and profitability. Government influence on undertakings should be exercised by legislative and financial means rather than detailed controls and not by placing different burdens (such as those of price control, wage restraint and cost of capital) on some undertakings than on others because some happen to be easier to control in these ways than others. These principles should apply to nationalised and private industries alike. Nationalisation old style should be replaced by a different process - namely a short-term intervention by the state to reorganise ailing industries on these principles; once the reorganisation has been carried out the new units created should be left to get on with their business cooperating with each other as they find best for certain purposes such as fundamental research and representation of common interests and competing with undertakings in their own or other industries for their share of the market subject only to general Government policies.

Such reorganisation depends on whether industry and the trade unions come to accept that the concessions involved for them are outweighed by the benefits.

For the sake of an improvement in the attitude of its employees and the security of its investments industry has to accept the splitting-up of its larger undertakings, the distribution of a part of profits to employees and effective participation by the latter's representatives in all aspects of policy making. The trade unions on the other hand are asked to change their attitudes from that of confrontation with individual employers to that of cooperation and to extend their objectives from those of maximising earnings and minimising hours of work to include the marketing success and overall financial viability of the undertakings. The unions are asked to accept too that the forms of nationalisation hitherto used should be drastically altered, and that state planning operates best when it concentrates on those matters that can only be dealt with at the centre and deals with them in a way that involves the minimum of detailed control. In exchange they are offered the chance of effective participation in policy making a fairer distribution of profits and better long-term prospects of there being more real wealth available for distribution to their members. By adopting a more socially cohesive role it should also be easier for them to get their demands met for such things as compulsory membership through the closed shop. If capital and labour do decide to fight to a finish the victory for whichever side that wins is likely to be hollow. The lessons to be learnt from the experience of both socialist and capitalist countries during the last half century show that both systems have advantages and disadvantages and that there would be great benefit in getting acceptance of what is good in both systems and in reorganising the industrial structure accordingly.

Amongst the many paradoxes besetting the attempt to present policies for LQL is that industrial reorganisation on the lines suggested may by improving industrial relations and encouraging investment, accelerate economic growth and the consumption of irreplaceable resources and so do nothing to avoid a final reckoning. To this it may be replied that the day of reckoning will at least be postponed and its form ameliorated by policies aimed also at directing industrial effort, improving of the physical, social and cultural environment, conserving scarce resources and at reducing hours of work rather than at maximising the output of consumption goods, and that any future crises will be better met by an understanding and cohesive society than by an ignorant, strife-torn one.

#### Local and regional government

The principle of giving more priority to social compared with short term economic objectives points also to the strengthening of local government. Amongst the reasons for doing this are that devolution of work provides more opportunities for constructive self-expression and fulfilment, makes it easier to ensure that policies are widely understood and that administration is always directed at serving the interests of the general population. But the strengthening of local government means reversing the tendency in the opposite direction that, for other reasons, has been strongly marked throughout this century.

Natural ambition and individual motivation to acquire more responsibility and power are strong forces which make those already in the seats of power favour further centralisation, and they are powerfully reinforced by the arguments of efficiency that can be advanced for control by technocrats rather than elected counsellors and for large, functionally-specialised rather than small, functionally-diversified units of organisation. It is the arguments of efficiency that have been used to justify the removal of services such as gas, electricity, health, water and sewage from local government and for the sweeping reductions in number of local authorities and elected councillors effected in 1974.

What new balance between participation and efficiency in local government should be aimed at in future? There is too much in favour of both for one of them to be made the sole objective. And in this as in other fields the balance needed in future is not to be found by simply returning to the earlier forms of organisation. Although the case for large centralised units on grounds of efficiency was overstressed - for instance no costings could be produced to justify the minimum size of authority that the central government departments concerned asserted to be essential to deal with education and health nor the degree of centralisation insisted upon for gas and electricity- there is no doubt that many of the old authorities responsible for these services were inefficient users of resources. And although comparatively little attention was paid in reorganisation to the need to encourage participation, there is no doubt that some of the old authorities were also far from satisfactory in that respect. It is necessary, therefore, to think in terms of further evolution of the new system of local government in ways that will promote both participation and efficiency, and, as in the case of industry, when a long-term view is taken both objectives are compatible because, without the social stability to be got from the former, the achievements of the latter will be of little value.

The reorganisation of local government is too recent and the need to give the new authorities time to overcome their teething troubles is too great to think of an early further reorganisation but it is not too soon to start studying the ways in which the new legislation is being implemented, watching for the dangers that it will be implemented in ways that further diminish Participation and looking for the lessons to be learnt from the working of the new system. For example, everything must be done to ensure that the community councils which are the smallest of the new units of local government and the closest to the individual citizen make the fullest use of their powers and are given as much work as possible to do so that each provides a lively focus of interest in its locality. Again the danger must be watched that central government control in matters of detail is increased because the limited ability of the rating system to provide the necessary revenue calls for increased dependence on central government finance or because the reduced number of counties makes it easier for the departments of central government to deal with them. In this connection the

ways in which the universities have been able to retain a large measure of individual initiative and freedom despite their overwhelming dependence on public funds administered through the University Grants Committee are relevant. Again the lessons must be studied of the different ways in which elected councillors, nominated members and salaried employees cooperate in different kinds of organisations: for example in the councils made up wholly of elected members to whom salaried officers report and in the authorities consisting partly of elected members and partly of salaried experts which are now responsible for water and the partly elected partly nominated authorities now dealing with health. Similarly lessons must be drawn from the different ways in which the salaried officers are organised: is it better that they are organised in separate departments corresponding to their different specialisms or is it better to have them organised in broad functional departments in which men with widely differing professional training cooperate together? Yet again, what are the relative advantages of strictly hierarchical forms of staff organisation in which responsibility centres on the appointed heads of departments and the more participative forms which include representatives of the lower grades of staff in committee structures? And what should be the role of the trade unions in the consultative and perhaps policy making processes? When the time does come for further reorganisation of local government the balance between participation and efficiency, as regards both internal and external relationships, will need to be the key consideration. In assessing it the lessons should be drawn not only from experience of the local authorities themselves but of services like water and health, the universities and nationalised and private industry, all of which have also to find the right balance between the same two things.

Regional government has the same arguments in its favour as local government. It can lift from central government part of the burden of detailed administration. It can promote social stability by providing greater opportunities for constructive self-expression and leadership and improving the links between governors and governed. It can also help to solve the problems created by racial, linguistic and religious differences by permitting diversity in matters that mean much to minority groupings without loss of the unity in other matters that are of mutual concern to the entire population. The strengthening of local government at community level can make a useful contribution towards meeting the special needs of immigrants from Commonwealth and other countries who are concentrated in some localities, and the establishment of elected assemblies or Parliaments for Scotland and Wales and the regions of England can help to solve the problems created by the strong sense of separate identity that the peoples of these different parts of Britain feel.

After careful study this argument was accepted by the Kilbrandon Commission and is now supported by a substantial proportion of political leaders. Elected



assemblies or Parliaments should be given important responsibilities for town and country planning, industrial location and development, housing, water, health, education and encouragement of the arts, tourism and sport responsibilities that are at present discharged by departments of central government or by committees whose members are nominated by central government ministers and whose present accountability to the citizens whom they serve is indirect and limited. These assemblies should be so constituted, empowered and financed that they complement and strengthen both central and local government.

This step has to be taken on the understanding that its success will be dependent on moderation and restraint on all sides. There are in principle only two ways of dealing with deep seated racial, linguistic, religious and historically determined differences. One is by a policy of integration aimed at producing uniformity. By threatening to deprive minorities of characteristics to which they are emotionally attached this risks creating resentments that will persist from generation to generation. The other is to accept the differences, treat them as the source of what can be a stimulating and fruitful diversity and make arrangements for promoting happy coexistence. The risk here is of concessions being made to appetites that will not be satisfied without injury to the vital interests of the majority whose reactions may then be vicious. If the majority is to show the moderation and restraint implied by the adoption of this second course the minorities involved must in their turn show the same qualities. Because the whole of the United Kingdom is weak and vulnerable in a world of high technology, fast-growing populations and limited resources, the long-term quality of life of all its inhabitants depends on cooperation with neighbouring countries and this is no less true for Scotland, Ireland and Wales in relation to England. North Sea and Celtic oil may seem to some to change the situation. But even if those important resources could be exploited independently, their life is measurable in terms only of a single generation - a fleeting moment in the life of nations. Regard for the interests of others is a golden rule which must be applied at least as sincerely in relation to the nearest neighbours as to more distant ones and the successful development of regional government in Britain therefore depends on a compact between the majority and its minorities - a compact based on a mutual regard for the other's interests as well as one being arrived at early enough and gaining wide enough acceptance to isolate the extremists on all sides.

#### Foreign policy

What policies in relation to other countries would best promote LQL? Because other countries are sources of primary materials and goods essential to material standards of living and because war with, or even between, other countries could bring disaster, this question means what policies would be best for promoting trade and maintaining peace.

Although international trade and peace appear to be mutually consistent objectives, in fact there are contradictions to be resolved in trying to decide what policies would best promote them. These contradictions are fundamental because they spring from the uneven geographical distribution of resources, from the nature of the technological and economic requirements for exploiting them, from differences in the economic and political circumstances of nations and from human nature itself. Thus the uneven distribution of resources means for example, that Middle Eastern oil, American grain, Canadian Arctic, Siberian and deep ocean minerals will be vital in the decades ahead and the struggle to obtain access to them could upset the balance on which peace depends. The advanced technology and heavy investment increasingly required to exploit resources are the source of other dilemmas: they promote the growth of international companies whose activities are beyond the control of governments and can give rise to conflict with the latter; and, because the installations and investments need security, they encourage support of strong governments in the countries where they are located and such governments can become authoritarian and unpopular so giving rise to other threats to peace. Again freedom of access and the promotion of trade point to monetary and tariff policies and freedom of movement of capital and ideas, which may suit states whose industries are competitive, currencies strong and social and political institutions stable but threaten the viability of other states in less fortunate circumstances. Within every country there is a difficult balance to be struck between expenditure on defence and that on other things and a balance that one state may think justified in the interests of peace may be regarded by another as threatening war. Underlying everything are questions as to whether policies should be directed at maximising the short-term economic advantage of the home population or whether in the long-term and wider interest some material sacrifices should be accepted at least in the short-term, and whether national pride and sovereignty should be subordinated for the sake of regional and international cooperation.

These dilemmas are reflected in the differences between idealist and realist students of international politics. Many of the writers of the first three decades of the present century believed in progress through greater freedom of trade, stronger international law and monetary systems and eventually supra-national world government possessing adequate military forces to ensure peace between the nations. But the unrealism of this view became apparent during the thirties. National governments were obviously unwilling to sacrifice the immediate interests of their own peoples and risk their own extinction. Even if the United States, Britain and France could have agreed to make the League of Nations truly powerful, no system that they could have accepted would have been likely to commend itself to disadvantaged Germany and Japan. Moreover the consolidation of Soviet power, the threats presented by revolutionary and nationalist parties in other countries and the gulf between Communist, Catholic

and other political and religious points of view meant that there was no generally accepted philosophy to provide an agreed foundation on which a new world order could have been established. The realists of the middle decades of the century felt forced, therefore, to accept the inevitability of a system in which each state seeks to further the immediate interests of its own people by securing access to resources and markets, protecting its own industries, maintaining its own armed forces and establishing such alliances and relationships with other powers as seem to it most appropriate.

In recent years this simple antithesis between idealist and realist has been altered by awareness of the implications of the newer methods of warfare and of ecological and geo-political factors. As regards the former the devastating potency of nuclear arms forces their possessors into a position of stalemate while the development of guerilla and subversive tactics makes it difficult to control violent action by small countries or discontented minorities. The inability of the major powers to prevent the devastating effects on their economies of the quadrupling of prices by the oil states in 1973, the failure of the United States to bring the war in Vietnam to a successful conclusion and of Britain to resolve the strife in Northern Ireland are examples. As regards the second, the growing interdependence of countries for essential raw materials, the generality of the threat of population growth, food and energy shortages and pollution and the heightened awareness of inequalities in living standards leading to mounting tension point increasingly urgently to the need for cooperation on a planetary basis. Strong international machinery is needed to deal with the politics of the oceans - fishing and mineral exploitation rights, dumping of poisonous substances, oceanographic research, freedom of navigation and the like. Similar machinery is needed to deal with balance of payments, difficulties that threaten to spiral world trade downwards. Again it is likely that misuse of power by international companies can only be effectively prevented by making them accountable to a world organisation representative of the general interest. Such considerations have in recent years brought the realist and idealist points of view closer together. They have led the hard headed rulers of the United States, the Soviet Union and China to seek accommodations with each other that only a short time ago were inconceivable. They are forcing lesser powers like Japan, Britain, Western Germany and other countries in the European Economic Community to reappraise their own position; they are changing the attitudes of the underdeveloped countries; and they present new opportunities for the international organisations.

Yet the obstacles to the desirable strengthening of international cooperation remain formidable. The growing pressure of population and expectations on resources increases the temptation for countries to act unilaterally in their own short-term interests. Political, religious, moral and cultural differences between, and within, countries remain deep and opinion that sees existing structures or

the threat to these structures through a mist of anger, self-interest and ideology threatens the delicate balance between freedom and discipline within countries and of peace between them. The spread of nuclear arms increases the risk of devastation and the stalemate between the super-powers and the effectiveness of guerilla warfare encourages nationalist and revolutionary movements. States remain reluctant to lose sovereignty to international organisations because they fear that the collective decisions of the latter may go against their own interests. For example the wealthy countries of the west see a growing tendency (particularly since the recent growth in influence of China and the oil-producing countries of the Middle East) for the countries of Asia, America and Latin America, which form the majority in the United Nations Organisation, to combine against them.

Against this setting, the first question to be asked is whether British foreign policy would not better promote LQL if it became more isolationist and less participative. There are some harsh realities which point to such a change. Britain has lost the advantages that once gave her great industrial, trading and military strength in relation to other countries and the factors accounting for the loss are such that it is probably impossible for her to recover her old position of relative strength. That strength was built up in the eighteenth and nineteenth centuries on the basis of coal, iron and steel, textiles, international trade and empire and the population expanded largely on the basis of imported food. Since the end of the First World War the old industries have lost their advantage and investment in new competitive industries has been inadequate. Other countries with greater natural resources or with more competitive industries have grown in strength and the empire has been lost. Moreover, the educational, social and political system and the historical conditioning has not been such as to develop in the mass of the population qualities of hard work, thrift, enterprise and discipline such as characterise other countries like Japan and Germany whose home resources are also small in relation to their populations. Weaknesses of this kind are not easily or quickly remedied. The lion that is ailing should change its attitude to other creatures especially if the latter have got stronger and have to compete more savagely for the means of subsistence; instead of continuing to participate in the general struggle, it should withdraw to concentrate on the resources still at its command in order to prolong its life and perhaps to gain a new strength which will enable it again to play a part in the wider world. Although the British withdrawal from overseas commitments may be said to have been carried out in most cases in a timely way which minimised bloodshed and loss of good relationships, the change in British attitudes to other countries has lagged behind the loss of relative strength, with the result that foreign policy has been dominated by short term needs to organise one retreat after another. Again it was out-dated thinking of a continuing role to be played as a great power that led to the decision to base defence policy on the expensive acquisition of nuclear arms of probably far less

real value than would have been expenditure on shelters, civil defence and conventional arms. It is now urgently necessary that the decline in relative strength be fully accepted and that policies be aimed at reconsolidation, strengthening of the home base and establishment of a new role within our capabilities in world affairs. But the same reasons that point to isolationism indicate the impracticability of relying on it alone and, accordingly, the right policy must be one of balanced objectives. Dependence on imports and the time and effort needed to reduce it are so great that to rely on the resources under full sovereign control would court a major reduction in material standards of living. An active foreign policy to maintain access to overseas supplies is, therefore, essential and is all the more important when less reliance can be placed on the ability to purchase, or fight for, supplies. At the same time because no negotiator can do well for long who has only urgent needs and limited resources, a major long-term objective of policy must be to reduce the one and increase the other. Reducing needs means increasing home production of commodities such as food, timber and energy and reducing the demand for them by measures of conservation and population reduction. Increasing the negotiator's resources means heavy investment in, and low cost output from, industries, the products of which can be expected to be in demand in tomorrow's world markets, and also in maintaining adequate military forces for essential defence purposes. It is apparent that for foreign, as for home affairs, harder work and more abstinence in the short-term are needed in the interests of LQL. But this is a general problem to be returned to later and in the meantime the question for consideration is what should be the bases of a participative foreign policy run in harness with a policy of reducing dependence on overseas supplies and seeking to establish a consistent and successful long-term role for Britain in world affairs?

To begin with, what should be British policy in relation to the three super-powers? Historical experience does not encourage optimism that peace between great powers with growing armaments will be maintained indefinitely, or rule out the possibility of war leading to eventual world domination by one or other of them. It may be that only through the use of the sword can the effective world that is needed be brought into existence. There would at first sight, therefore, appear to be arguments in favour of a foreign policy aimed at securing alliance with the most likely winner in a further world struggle. But the unwisdom of such an attitude is clear. In the first place, it is not possible to predict the winner: the present advantage in military, economic and political might rests with the United States and then with the Soviet Union, but China is rapidly increasing in power and has the advantages of size, homogeneity, discipline and morale of population; the United States is at the centre of the American continent with its great resources but the other two are well placed in relation to the still vaster developed and underdeveloped resources of Eurasia; and while the democratic and capitalist systems of the West appeal to many

countries, the Soviet and Maoist ideologies attract others and inspire revolutionary parties elsewhere. In the second place, if there were to be conflict on such a vast scale it is impossible to say what the physical and political circumstances would be afterwards and whether alliance with the victor would be of any value. The devastation caused by nuclear armaments and the complexities of post-war administration, especially if the government of a single nation sought to impose its own will on all the other diverse nations as well as on its own subjects, make it likely that it would not. The best policy for Britain in relation to the super-powers would seem therefore to do what it can to maintain peace between all three of them. Again because Britain could not break its alliance with the United States without serious threat to its essential imports of food and energy and to its trading and financial interests, the best that can be done is to maintain that alliance while seeking to influence the United States to eschew such policies as those pursued in Vietnam and elsewhere which failed to gain the support of the peoples immediately concerned and weakened the standing of western governments at home as well as in the rest of the world.

If helping one of the super-powers to achieve world domination should not be the objective of participative foreign policy, the only other way of helping to secure the kind of effective cooperation at world level that is essential in the interest of LQL is to strengthen international organisations and it is in that direction that a new role for Britain should be sought. The strengthening required to keep the peace, maintain world economic activity and tackle the problems of global ecology is radical. As the history of the League of Nations and the United Nations Organisation shows, the central authority should have the final word and that implies that it should have greater military power at its disposal than any one state or likely group of states. This means in practical terms the transfer to it of the installations for producing and using nuclear arms as well as adequate forces of conventional form. The practical problems entailed by this as well as the general loss of national sovereignty and power to defend vital interests are such that the very notion has long been regarded as laughable. But the situation that has developed in the mid seventies requires that the notion be seriously considered for pragmatic and realist, as well as idealist reasons. There already is, and all must hope will continue to be, a mutual stalemate of the nuclear powers and while they are unable to use their power, other countries are forcing through by the use of conventional arms and of strong positions in vital commodities like oil, massive changes in political structure and the distribution of income. These changes together with the risks of nuclear war, internal break downs of law and order and loss of exports from the world's greatest sources of food and manufactures threaten to be more dangerous to all countries including the great powers as well as the under-developed and the socialist as well as the capitalist than would be the creation of new strengthened forms of world organisation. As the first world war led to the creation of the League and the second to that of the United Nations, so the

present world crisis should lead to a major new effort in the direction of an effective world authority. In that effort Britain, with its still great influence and experience, should be able to play a useful part.

Britain also has an important part to play inside the European Community - a part that should be consistent with its role in helping to create an effective world authority. Some of the reasons for joining the Community can no longer be said to be sound. It was argued at one time, at least in some influential quarters, that membership of the Common Market would almost automatically give the two sides of British industry a good shaking, increase productivity and exports and strengthen the pound and that Britain would be able to make up for its loss of empire by assuming the leadership of an united Western Europe, which would both be less dependent on the United States and more resistant to left wing movements. The main reason advanced for not joining it and subsequently for leaving it - namely, loss of sovereignty - was still less sound. Effective cooperation with other states is essential in the modern world; it is more obviously and naturally entered into with neighbouring states who offer it than with others; and some curtailment of his individual freedom of action is the price that every partner to an agreement must expect to pay. It is true that in relation to the objectives of the founders the progress of the Community in recent years has been disappointing (particularly in defence and foreign policy, in harmonisation of financial systems and monetary union in the development of coordinated policies towards inflation and unemployment and in strengthening the Parliament at Strasbourg). Nevertheless, in comparison with what could have been expected without the Community, progress has been great. The fundamental reasons why Britain should now make a success of its membership inhere in the facts that the full members between them cover the largest, most scientifically industrially and culturally-advanced population in the world occupying one of the most geographically favoured areas of the globe and that they have associated with them nearly 50 other countries in the under-developed world. Cooperation within such an entity offers possibilities of wider markets more efficient use of natural resources, greater security of supplies of foodstuffs and other essential requirements and the spread of prosperity to the less prosperous regions of Western Europe and less-developed countries overseas. Progress towards creating a world authority able to tackle the global problems of population and resources, pollution and poverty, internal strife and war will require the active cooperation of the community and getting that cooperation should be a major British endeavour within it.

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