

THE THEORY OF ECONOMIC GROWTH

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CONTENTS

PREFACE	page 5
I. INTRODUCTION	9
1. DEFINITIONS	
2. METHODOLOGY	
3. LAYOUT	
Bibliographical Note	
II. THE WILL TO ECONOMIZE	23
1. THE DESIRE FOR GOODS	
(a) Asceticism	
(b) Wealth and Social Status	
(c) Limited Horizons	
2. THE COST OF EFFORT	
(a) The Attitude to Work	
(b) The Spirit of Adventure	
3. RESOURCES AND RESPONSE	
Bibliographical Note	
III. ECONOMIC INSTITUTIONS	57
1. THE RIGHT TO REWARD	
(a) Non-Material Rewards	
(b) The Management of Property	
(c) The Reward for Work	
2. TRADE AND SPECIALIZATION	
(a) Advantages	
(b) The Extent of the Market	
(c) Organization	
3. ECONOMIC FREEDOM	
(a) Individualism and Collective Action	
(b) Vertical Mobility	
(c) Freedom of Markets	
4. SOME CASES	
(a) Religion	
(b) Slavery	
(c) The Family	
(d) The Organization of Agriculture	
(e) Cottage Industry	
5. INSTITUTIONAL CHANGE	
(a) The Process of Change	
(b) The Cycle of Change	
Bibliographical Note	
IV. KNOWLEDGE	164
1. THE GROWTH OF KNOWLEDGE	
(a) Pre-scientific Societies	
(b) Invention and Research	

CONTENTS

2.	THE APPLICATION OF NEW IDEAS	
(a)	The Attitude towards Innovation	
(b)	Knowledge and Profit	
3	TRAINING PROGRAMMES	
(a)	Priorities	
(b)	Agricultural Extension	
(c)	Industrial Aptitudes	
(d)	Business Administration	
Bibliographical Note		
V	CAPITAL	201
1	CAPITAL REQUIREMENTS	
2	SAVINGS	
(a)	The Need for Savings	
(b)	Domestic Sources	
(c)	External Finance	
3	INVESTMENT	
(a)	The Institutional Framework	
(b)	Point of Departure	
(c)	Stability	
(d)	Secular Stagnation	
Bibliographical Note		
VI	POPULATION AND RESOURCES	304
1	POPULATION AND OUTPUT	
(a)	Population Growth	
(b)	Size and Output	
(c)	Occupations	
2	INTERNATIONAL RELATIONS	
(a)	International Trade	
(b)	Migration	
(c)	Imperialism	
Bibliographical Note		
VII	GOVERNMENT	376
1	THE FRAMEWORK OF ENTERPRISE	
(a)	The Functions of Government	
(b)	Production Programmes	
2	THE PUBLIC SECTOR	
(a)	Public Expenditure Programmes	
(b)	The Fiscal Problem	
3	POWER AND POLITICS	
(a)	Roads to Stagnation	
(b)	Background to Statesmanship	
Bibliographical Note		
APPENDIX IS ECONOMIC GROWTH DESIRABLE?		
(a)	The Benefits of Economic Growth	
(b)	The Acquisitive Society	
(c)	Problems of Transition	
INDEX		436

CHAPTER I

INTRODUCTION

I. DEFINITIONS

THE subject matter of this book is the growth of output per head of population. What follows does not depend upon precise definitions of these terms; nevertheless some comment on their meaning may be helpful.

First it should be noted that our subject matter is growth, and not distribution. It is possible that output may be growing, and yet that the mass of the people may be becoming poorer. We shall have to consider the relationship between the growth and the distribution of output, but our primary interest is in analysing not distribution but growth.

Secondly, our concern is not primarily with consumption but with output. Output may be growing while consumption is declining, either because saving is increasing, or because the government is using up more output for its own purposes. We shall certainly have to consider the relationships between output, consumption, saving and government activity, but we shall be doing this from the angle of the growth of output, and not from the angle of the growth of consumption.

The definition of output we leave to the theorists of national income. There are difficult index number problems in comparing one year's output with another. There is the difficult problem of deciding what is to be treated as output, and what is to be treated as the cost of output; is increasing expenditure on retail distribution, or advertising, or transportation to be taken as an increase in output, or merely as a cost of increasing specialization? If work which was formerly done by the consumer for himself (e.g. making clothes) is now transferred to factories, is this an increase of output? We mention these problems so that pedantic reviewers shall not be able to say that we are not aware of them. We do not, however, have to solve them. For our concern is not with the measurement of output, but with its growth. For the purposes of this book any consistent definition of the output of goods and services will do.

The definition must, however, relate to goods and services—'economic' output, in the old fashioned meaning of 'economic'—and not to some such concept as welfare, satisfaction or happiness. It is possible that a person may become less happy in the process

of acquiring greater command over goods and services. This frequently happens to individuals, and it may also happen to groups. This book is not, however, an essay on whether people ought to have or to want more goods and services; its concern is merely with the processes by which more goods and services become available. The author believes that it is good to have more goods and services, but the analysis of the book does not in any way depend upon this belief. In order to emphasize the fact that the book is about the growth and not about the desirability of output, he has relegated what he has to say about desirability to an Appendix at the end of the book.

We have next to distinguish between output and output per head of population. The relation between population and total output is an obvious part of our subject matter. Output per head will not however be our sole concern, for we are also interested in output per hour of work done, which may differ from output per head if people work longer or shorter hours, or if a greater or smaller part of the population is at work. All these matters will come under review.

The unit of enquiry is the group. Most commonly this will be the nation-group, in the peculiar statistical sense of the group about whose activities separate statistics of foreign trade are published; or the group in respect of whom separate censuses are taken. This is a definition of convenience, which comes near enough to defining the group as the people under one government, without entering into the difficulty of distinguishing between colonial governments, federal governments, and other variations of 'one' government. Much of the analysis will, however, apply equally to other groups, for example, sometimes to minority groups, and sometimes to regional groupings.

Finally, it should be noted that we shall have frequently to resort to abbreviation. 'Growth of output per head of the population' is rather a long phrase to repeat over and over again in a book. Most often we shall refer only to 'growth' or to 'output', or even occasionally, for the sake of variety, to 'progress' or to 'development'. Whatever the short term used, 'per head of the population' should be understood, unless total output is clearly specified or clearly intended by the context.

2. METHODOLOGY

The growth of output per head depends on the one hand on the natural resources available, and on the other hand on human behaviour. This book is primarily interested in human behaviour, and concerns itself with natural resources only in so far as they affect

human behaviour. Thus it is obvious that poverty of natural resources sets sharp limits to the growth of output per head, and that a considerable part of differences in wealth between different countries has to be explained in terms of richness of resources. But it is also clear that there are great differences in development between countries which seem to have roughly equal resources, so it is necessary to enquire into the differences in human behaviour which influence economic growth.

The enquiry into human actions has to be conducted at different levels, because there are proximate causes of growth, as well as causes of these causes. The proximate causes are principally three. First there is the effort to economize, either by reducing the cost of any given product, or by increasing the yield from any given input of effort or of other resources. This effort to economize shows itself in various ways in experimentation, or risk-taking; in mobility, occupational or geographical; and in specialization, to mention only its chief manifestations. If the effort is not made, either because the desire to economize does not exist, or else because either custom or institutions discourage its expression, then economic growth will not occur. Secondly, there is the increase of knowledge and its application. This process has occurred throughout human history, but the more rapid growth of output in recent centuries is associated obviously with the more rapid accumulation and application of knowledge in production. And thirdly, growth depends upon increasing the amount of capital or other resources per head. These three proximate causes, though clearly distinguishable conceptually, are usually found together.

The second stage of the analysis takes us behind these proximate causes to ask why it is that they are found strongly operating in some societies but not in others, or at some stages of history but less so in others. What environments are most favourable to the emergence of these forces which promote growth? This stage of the enquiry subdivides itself. First we must enquire which kinds of institutions are favourable to growth, and which are inimical to effort, to innovation or to investment. Then we must move into the realm of beliefs and ask what causes a nation to create institutions which are favourable, rather than those which are inimical to growth? Is a part of the answer to be found in the different valuations which different societies place upon goods and services relatively to their valuation of such non-material satisfactions as leisure, security, equality, good fellowship or religious salvation? It is necessary to establish how far the spiritual and the material values conflict, if they do, and how far the institutions reflect particular ideas of the right way to live. Still further behind this lie questions relating to nature and environment.

What causes a people to have one set of beliefs, rather than another set of beliefs, more or less favourable to growth? Are the differences of beliefs and institutions due to differences of race, or of geography; or is it just historical accident?

These questions are all questions of consistency: they ask what institutions or beliefs or environments are consistent with economic growth. But there are also questions of evolution. How do beliefs and institutions change? Why do they change in ways favourable to or hostile to growth? How does growth itself react upon them? Is growth cumulative, in the sense that once it has begun, beliefs and institutions are inevitably fashioned in such a way as to facilitate further growth; or is it self-arresting, in the dialectical sense that new beliefs and institutions are inevitably created to resist growth, and to slow it down? Are there self-reversing swings over the centuries in human attitudes and institutions, which make the process of growth inevitably cyclical?

The field of analysis which we have thus set out is customarily said to be divided out between different branches of the social sciences, but if the division has ever been made it has never been effective. Thus, one might have expected economists to study the proximate causes, but they have done so only very selectively. Economists have studied specialization and capital. They have also stressed the importance of mobility, of invention and of risk-taking, and analysed with care and elegance the logical implications of the will to economize. Some economists have gone on to study institutions; nineteenth-century economists especially refer frequently to land tenure, or to primogeniture, or to joint stock company legislation. However, such interests ceased to be fashionable in the second quarter of the twentieth century, and were even authoritatively stated not to be the proper business of economists. All the rest of the field belongs to sociologists, to historians, to students of beliefs, to lawyers, to biologists or to geographers, but they have done little more than to look at it, and to put in a spade here and there. One suspects that the sociologists have left the study of economic institutions to the economists, while the economists have left the subject to the sociologists. Where the general attitude is to leave the field to someone else, perhaps there will be no jealousy at the boldness of this writer in attempting a general survey. Perhaps too the field will no longer seem so discouraging if there is provided at least a crude map of its resources and its potentialities.

The questions of consistency are much easier to tackle than the questions of evolution. This is because, like the theories of economics or of mathematics, questions of consistency lend themselves to the process of deduction from simple premises. For, in the light of one or

two simple generalizations, it is not difficult to see why some beliefs or institutions promote growth more than others. Relevant generalizations are such as that men are more likely to invest if they value extra goods highly than if they do not; or if they will reap the fruit of the investment for themselves than if it becomes common property; or if there is freedom to buy or hire co-operating resources than if there is not. Economists are applying the deductive method all the time to those of their problems which are quantifiable, at least conceptually, and which can therefore be handled mathematically. The consistency of beliefs and of institutions with growth is not a problem in mathematics, and this is why we have in recent years fought shy of tackling such matters. But the deductive method is nevertheless applicable and fruitful.

Some of the most elegant work of economic theorists in recent years has been concerned with the stability of economic growth. Starting by assuming capitalist institutions and habits, economists have built mathematical models which oscillate, or rise logically towards a limit, or ultimately swing round from growth to secular decline. These results are achieved by assuming various coefficients, and various relations between parameters – for such matters as the propensity to save, or the birth rate, or the determinants of investment decisions. This work in turn has stimulated statistical enquiry to discover what relationships and coefficients best fit recent experience in the United States and other advanced economies. This work is essentially in the area of consistency rather than of evolution. It seeks to discover what the relationships and propensities are, and how far they are consistent with stable growth; it does not tell us why the coefficients are what they are, or why they change over time. The result is an indispensable tool for short-term analysis, to be used when we are enquiring into the history of some particular group during some short period of time, during which the basic institutions and attitudes can be assumed to change very little. But if we are concerned with long-term studies of changes in propensities, or if we wish to account for differences between groups or countries, we have usually to look beyond the boundaries of contemporary economic theory.

In applying the deductive method to the consistency of institutions with growth, the danger we have to avoid is that of bias. There is a natural tendency to assume that things which are associated in the society we know must necessarily also be associated in all other societies. An important example of this is in the association between individualism and growth. In Western capitalistic societies men recognize fewer social obligations than they do in most other societies, and we naturally tend to assume that a man is more likely

to make economizing efforts if the fruit accrues to himself alone than he would if the fruit had also to be shared by more distant members of his family, or by a whole clan, or by religious or political leaders, or by others whose claims he would not automatically recognize in an individualistic society. This assumption may be false. Institutions which would hinder progress in Western Europe may be conducive to progress in a society whose tests of whether effort is worth while are quite different because of their different conception of what is worth having. There is no way of guarding against this bias except observation. From the studies made by anthropologists and by sociologists we have to try to decide what is universal, in the sense of what is common to human behaviour in different social contexts, and so to arrive at basic generalizations which stand up to comparisons between societies, and which can therefore in turn be used for assessing institutions.

It should of course be added that some institutions or beliefs may be consistent with growth but not with each other. For example, economic growth is consistent with the state investing twenty per cent of the national income in public capital formation, or with private enterprise investing twenty per cent of the national income in private capital formation. But it is doubtful whether it would be possible to have one and the same society in which the state invested twenty per cent and private enterprise invested another twenty per cent in capital formation. The consistency of institutions with each other is a problem of special interest in the analysis of social change, and it is mainly in this context that we shall have to keep it in mind.

The most difficult problem in consistency is to explain why people hold the beliefs they do. Economic growth depends on attitudes to work, to wealth, to thrift, to having children, to invention, to strangers, to adventure, and so on, and all these attitudes flow from deep springs in the human mind. There have been attempts to explain why these attitudes vary from one community to another. One can look to differences in religion, but this is merely to restate the problem, since it raises the question why the particular religion holds these particular tenets, and why it has been accepted in this particular place and not elsewhere. Or one can look to differences in natural environment, in climate, in race, or, failing all else, in the accidents of history. The experienced sociologist knows that these questions are unanswerable, certainly in our present state of knowledge, and probably for all time. He will not expect any more in this book than that they should be briefly explored. We can say a fair amount about consistency between institutions and economic growth, and a fair amount about the relationship between attitudes and institutions; but when we come to explore the attitudes themselves, how they

emerge, and why they change, we reach sooner or later to the limits of our understanding of human history.

Questions of social evolution are even more difficult to handle than questions of consistency because the deductive method helps much less towards answering them. To understand how or why something happens, we must look at the facts, that is to say, we must apply the inductive method to historical data.

Every economist goes through a phase where he is dissatisfied with the deductive basis of economic theory, and feels sure that a much better insight into economic processes could be obtained by studying the facts of history. The instinct is sound, yet the enthusiasms of this phase seldom survive any serious attempt to get to grips with the facts of history. This is because there are very few facts of history in the relevant sense. We mean by this, in the first instance, that it is only for very few countries and for very recent periods that any adequate quantity of historical records exists, and even when there are plenty of records we cannot always be certain exactly what happened. We mean also more significantly, that the 'facts' which would interest the theorist are not what happened but why it happened, and while history may record what happened, it is seldom able to record why it happened. The records may show what some people who lived at the time thought to be the cause. But, for most of the events that interest economists (and especially, for gradual changes in institutions or beliefs), very few contemporaries even knew that they were happening, and most of the recorded opinions as to why they were happening have to be treated with reserve.

History therefore consists not of facts but of historians' opinions of what happened, and of why it happened. Historians' opinions of what happened are usually pretty reliable - with, of course, striking exceptions - since historians are trained in sifting historical evidence. But their opinions of why it happened are usually not more than a reflection of their personal theories of social causation, which determine which facts they select as important. Most economic historians explain economic events in terms of the economic theory current at the time of writing (or worse still, current in their undergraduate days when they were learning their economic theory), and a new crop of economic theories is liable to be followed by a new crop of historical articles rewriting history in terms of the new theory. A good historian's opinion of what happened, and of whether the facts he finds are consistent with this hypothesis or with that is always worth having, and is indispensable. Yet it is obvious that when the social theorist appeals to facts, in the sense of appealing to history, he is appealing to facts in quite a different sense from that in which the chemist or the biologist appeals to facts.

But our difficulties do not end here. For even if what happened were clear beyond all doubt, it would still be difficult to construct social theories from these facts. Each historical event has a number of contributing causes. The event may repeat itself several times, but the constellation of causes is usually different, since history cannot repeat itself exactly—if only because each successive event has more history behind it. The problem is therefore to decide which causes are more important than others. If the events with which we are dealing are measurable we can sometimes do this by means of statistical techniques, which result in equations where each cause is assigned a specific weight (coefficient). If we are dealing with non-measurable events, however, we are back in the realm of personal judgment. This is made still more difficult by the limitations of the human mind. No one person can know enough history—of different periods and different countries—to know enough facts—even if the facts were perfectly knowable—to feel confident that his theory is based upon a comparison of a sufficient number of events to justify generalization, that he has got all the facts right each time, and that his generalization could not be disproved by adducing other similar events which he has not considered.

It follows that theories of social evolution can never be placed upon as secure a foundation as can the theories of chemistry or biology, whose appeal is to repeatable experiments. The difference may be one of degree only, in the sense that the more speculative theories in the natural sciences are often upset by the discovery of new facts. But the facts of history are so much less securely established than are the facts of repeatable experiments that this is one of those differences of degree which is virtually a difference in kind.

It does not follow that we should cease to try to understand social change; man being a curious animal, it is beyond our nature to cease to try to understand. What follows is that we should be modest in our claims, and recognize how tentative is any hypothesis which we claim to base upon the study of history.

The formulation of theories of evolution proceeds at two levels. At the lower level we try to discover how things change and why; at the upper level we predict what is going to happen. The former is the essential business of social theorists, but it is of course the latter which offers the greatest excitements and follies.

At the lower level the social theorist attempts to discover which are the important variables, what are their relative weights, and how they are interconnected simultaneously and in time. At the upper level he has to predict how all the variables will change, and it is this which makes prediction impossible.

Most predictions are no more than exercises in method. We say:

the result depends on the behaviour of variables *a* to *z*; if we assume that *a* to *g* stay constant, and that *h* to *r* change in certain specified ways, then we can predict that the result will be such and such. To be able to predict what will happen we have to be able to know how all the variables are going to behave; we must know whether there is going to be a war within the specified time, or an earthquake, or an outbreak of influenza, or the birth or death of some influential person at a critical time, or a thousand other matters which influence the course of events. Many of these things can never be foreknown; even if they could be foreknown no single brain could ever set up a system of equations which could embrace all the millions of variables which determine the future. We cannot therefore hope to achieve more than partial predictions of the 'if . . . then . . .' variety. Examples of these are the difference equations which we use in exercising some problems of economic dynamics; or the Ricardian theory of economic growth through population and diminishing returns towards stagnation; or the Schumpeterian prognosis of institutional developments in Western capitalism. These exercises in method are often presented as something more than this, because the authors either do not realize themselves or fail to make clear to others the assumptions upon which the exercise is based. They usually also fail to predict the future correctly, because the coefficients were wrong or have changed, or because the relations between the variables were wrong or have changed, or because new variables which had been neglected turn out to be important. The failure of these exercises is no cause for shame, since it is only by finding out why hypotheses are inadequate that we can hope to glean a less imperfect understanding of the how and why of social change.

In this book we write with fair confidence on how society changes, but with little or no confidence on the directions in which it is likely to change. There are a few well established generalizations on the process of change—on such matters as who are the most likely innovators, on the role of imitation, on the sources of resistance to change, on the logistic process of growth, and so on. These generalizations seem also to have universal application, in the sense that the process of social change is much the same today as it was 2,000 years ago, and is much the same in societies of varying stages of development. Hence in writing about such matters we can take all human history for our province, without seeking to find different laws for different stages of social organization. Here we are in much the same position as when we discuss problems of consistency; human attitudes to property or to reward, or to child bearing do differ, but different societies have enough in common for it to be possible to deduce some general rules of human behaviour. We can tell how

change will occur if it occurs; what we cannot foresee is what change is going to occur.

This introductory statement on methodology may help to explain why this book does not pursue lines of enquiry which may be found in other analyses of economic evolution. We do not believe that it is possible to say how any particular social system is going to develop, and we do not, therefore, like Ricardo or Marx or Toynbee or Hansen or Schumpeter set out a theory of the laws of evolution of society. We do not believe that there are stages of development through which every society must pass, from primitive stages through feudalism to exchange economies, and do not therefore follow in the footsteps of Comte or Marx or Herbert Spencer or Weber. All our prediction is on the much more pedestrian level of enquiring how far the changes which occurred in the wealthier countries as they developed may be expected to repeat themselves in the poorer countries if they develop. Sometimes we can answer fairly confidently; for example, to say that the proportion of the population engaged in agriculture will fall, or that status relationships will give place increasingly to contractual relationships. In other places we do not know the answer, such as in predicting whether the birth rate will fall as the standard of living rises, or whether war is an inevitable product of economic growth. Much of the book is concerned with noting the changes which have occurred in developing societies, and in enquiring whether those who come after may be expected to follow in the footsteps of those who went before. As for the leading countries themselves, we hold it to be impossible to predict where they will go next, since we do not believe that the future of the human race is governed by immutable laws of which we have or can have knowledge.

J LAYOUT

The layout of a book on economic growth is largely a matter of personal choice. The matters to be studied are so closely inter-related that it does not matter where one begins. This book begins with the effort to economize, and the beliefs and institutions which determine how vigorous this effort is. Next it considers the role of knowledge in growth, and the processes which facilitate both the accumulation and the diffusion of knowledge. The study of resources per head opens with a chapter on capital, and then continues with a chapter on population. This in turn leads naturally to international trade, since this is the outcome of different distributions of resources relatively to population. The role of government in economic development is not a separate subject; it really belongs to each of these chapters;

but it is convenient to treat government in a separate final chapter because of its importance. In each chapter the approach is the same; from the angle of consistency with growth we are interested in economic relations, in institutions and in beliefs; and from the angle of evolution we are interested in why things change, in how they change, and in whether any trends can be perceived.

This division of our subject matter between the various factors in economic growth makes it necessary to stress from time to time the inter-relationship between the several factors, in the sense that advance on any one front will bring about advance on the others as well. If more capital becomes available, for example from abroad, it will as likely as not be associated with new technologies, and will probably affect the pattern of institutions and of human attitudes. If new knowledge is discovered, investment will be stimulated, and institutions will feel the impact. If institutions are liberalized, human effort will increase, and more knowledge and more capital will be applied in production. Social change is cumulative, with the effect that different factors reinforce each other.

Despite this inter-relationship, there are fashions in asserting that some one factor is more important than all the others. To Adam Smith, for example, and a long line of liberal economists, what was needed to promote economic growth was primarily the right institutional framework; given this framework there was not much need to bother about willingness to make effort, or about the accumulation of knowledge, or about capital accumulation, since all these were instinctive human reactions, inhibited only by faulty institutions. To Malthus, on the other hand, one of the major obstacles in under-developed countries was lack of demand, which we would translate in these days as 'a low valuation of income in relation to leisure', and this point of view has many adherents today. Another school fastens upon low technological skill as *the bottleneck*; President Truman's programme for under-developed countries, for example, which claimed that technical assistance is what the under-developed chiefly need from the developed countries. Or there is the school which fastens upon capital as the bottleneck, claiming that if only the capital were available new technologies could be made available too, and that in the process of economic growth all institutions hostile to economic growth would be altered or swept away. And finally there is the school which puts all the emphasis upon natural resources, claiming, in effect, that every country gets the capital and the institutions which its natural resources warrant. Corresponding to these different emphases, we get the different meanings of the word 'under-developed'. A country may be under-developed in the sense that its technology is backward, when compared with that of other

countries, or in the sense that its institutions are relatively unfavourable to investment, or in the sense that capital resources per head are low when compared say with Western Europe, or in the sense that output per head is low, or in the sense that it has valuable natural resources (minerals, water, soil) which it has not yet begun to use. A country may be more under-developed in one of these senses, and less so in others, but in practice there is such close relationship between these indices that it is odd to find men abusing each other for using the word 'under-developed' in one sense rather than in some other.

Of course, it is true that one obstacle to growth may stand out above all others, in some particular place at some particular time, either in the sense that the deficiency is greatest at this point, or else in the sense that it is easier to make a start there than at any other point. For example, it is possible to think of countries where the principal contemporary obstacle to growth is institutions (e.g. bad government, or bad tenancy laws) in the sense that more knowledge and capital would come forth if the institutions were changed, but not otherwise. It is equally possible to think of other places where current institutions are not an obstacle to economic growth, and where the principal shortage is capital. And there are still other places where a good start could be made by taking new technologies to the farmers, in the shape of fertilizers and better seeds. It is sometimes desirable to concentrate one's attention on a single problem to the exclusion of most others. This, however, is only a temporary tactic, in the sense that if one succeeds in breaking one bottleneck, the result is usually that some other comes into prominence. If the farmers take to the seeds and fertilizers, new capital will be needed to handle the extra output; if capital becomes available, mortgage and other investment laws must be made appropriate; if institutions improve, some other obstacle to growth then comes into view. Hence though the reformer may begin by working upon one factor only, he has to bear in mind that if he is to have full success, much other change is involved beyond the factor with which he is immediately concerned.

In this book we separate the various causes of growth for analytical purposes only. Since the causes are inter-related, the book must be read as a whole if it is not to be misunderstood; each sentence, or paragraph or chapter takes for granted what is written elsewhere, and if torn from its context, may cease to be true. There are also certain topics, e.g. religion, which have to turn up in several chapters, each time in reference to some different aspect of economic growth. Some confusion is inevitable when one has to dissect a subject which cannot be dissected. We have tried to ~~keep~~ confusion to a minimum

by making frequent cross-references in the text, but the reader who wishes to get a complete view of any single topic must use the index for this purpose.

CHAPTER II

THE WILL TO ECONOMIZE

THE three proximate causes of economic growth, as we have said, are economic activity, increasing knowledge, and increasing capital. In this and the succeeding chapter we pursue the first.

By economic activity we mean effort directed towards increasing the yield of a given effort or resource, or towards reducing the cost of a given yield. To say that economic activity is necessary to economic growth is to say no more than that men are no likely to get more unless they try to get more. Growth is the result of human effort. Nature is not particularly kind to man left to himself she will overwhelm with weeds, with floods, with epidemics and with other disasters which manwards off by taking thought and action. It is by accepting the varied challenges presented by his environment that man is able in innumerable ways to wrest from nature more product for less effort.

To accept the challenge of nature is to be willing to experiment, to seek out opportunities, to respond to openings, and generally to manoeuvre. The greatest growth occurs in societies where men have an eye to the economic chance, and are willing to stir themselves to seize it.

Now societies differ widely from each other in the extent to which their members seek out and exploit economic opportunities. There is a difference between countries, between groups in the same country (e.g. regional, religious or racial groups), and between patterns of behaviour in the same country at different stages of its history. These differences may be traced to three distinct causes, namely to differences in the valuation of material goods relatively to the effort required to get them, to differences in available opportunities, and to differences in the extent to which institutions encourage effort, either by removing obstacles in its way, or by conferring to the individual the trust of his effort. Many of the observed differences in effort are due to institutional defects, and social reformers who wish to promote economic growth are mainly concerned with seeking to bring about appropriate changes in institutions, whether by propaganda or by law. There are, however, also real psychological differences in the willingness to make effort, and we must analyse these differences first. Needless to say the attitudes and the institutions are not independent of each other, we separate them here only for purposes of analysis.

1. THE DESIRE FOR GOODS

When we say that a particular group places a low valuation upon goods relatively to effort, the difference may lie either in a lesser appreciation of goods and services, or else in a higher psychological cost of the effort required to get them. Under the first heading, the lower valuation of goods may be due to asceticism, or to a higher valuation of other activities, or to limited horizons. Under the second heading we must remember that economic effort embraces all ways of seeking out and using opportunities, not only work, but also mobility and enterprise. We shall consider in turn attitudes to each of these matters.

(a) Asceticism

Ascetic codes recognize special merit in consuming less than the rest of one's fellows. Several paths lead to the conclusion that this is the superior way of life. In the first place, some codes stress the value of learning to control one's natural desires, for food, for sex, for comfort and for other satisfactions; they encourage forms of fasting and other discomforts as means of spiritual growth. In the second place, earning one's living consumes time which might be given to meditation or to religious exercises; not all religions take this view—in some God is glorified as much in work as in prayer, and work is a means of earning spiritual merit. In the third place, earning a living sometimes brings out aggressive tendencies towards one's fellows, and it is better to avoid this temptation by confining oneself to consuming as little as one can manage.

Most codes distinguish between what is expected of priests, or others professionally engaged in practising, safeguarding or disseminating the code, and what is expected of the laity. Priests are generally expected to be poor. This is not always so even in the theory of the matter; the priests of some religions, e.g. in Africa, are not expected to be more ascetic than their fellows. Also, the theory is not always put into practice, for, in many churches where ascetism is the ideal expected of priest, there is nevertheless much wining and dining and living in luxury. This distinction between theory and practice is facilitated where a distinction is drawn between the priests and the church. If the code does not prevent the church from growing rich—and hardly any religion opposes the accumulation of wealth by its church—it is hard to expect the individual priests, who administer the wealth of the church, to refrain from enjoying some of it for themselves.

The distinction between what the code expects of priests and what it expects of the laity cannot be watertight, if only because the laity are expected to model themselves to some extent upon the priests,

whose way of life is supposed to be the model of holiness. In the matter of asceticism, however, the code seldom demands of the layman more than that he should practise various forms of asceticism (especially fasting) from time to time, or on specified days, or for specified periods. And these periods of asceticism are usually matched by corresponding festivals or feast days, when the faithful are encouraged to give themselves over to indulgence in varying degrees. In origin, many of the fasts and the festivals are associated with the seasons of agriculture; one fasts in the hungry period before the harvest, and feasts in thanksgiving when the crop is garnered.

The only parts of the world in which the ascetic ideal is held before the laity with any emphasis are the parts where Hinduism and Buddhism hold sway, and even in those parts it is doubtful whether this ideal actually influences the conduct of many laymen. It may be that in these countries some people who might otherwise pursue a business career are attracted instead to the priestly life, but this happens everywhere. It may also be that the proportion so attracted is larger than it is elsewhere, and that there are 'too many priests' in the restricted economic sense that too much talent is withdrawn from economic pursuits, and also that resources which the laity could otherwise have used for capital formation have instead to be used for supporting a disproportionately large class of priests. But this if it were so, would testify merely to the power of religion in those parts, and to the attractiveness of the priestly life. The power of a religion to attract large numbers into its professional service is not primarily a function of whether or not it stresses the merits of asceticism. Countries as widely separated as seventeenth century Spain and contemporary Tibet are alleged to have been drained economically by an excess of priests, but the allegation is more relevant to investigating the forces which determine how much resources are available for capital formation than it is to a discussion of the effect of asceticism upon the behaviour of the laity.

It is safe to assert that this effect is small. Nowhere in the world are laymen reluctant to seize opportunities of raising their standard of living simply because they believe that it would be bad for their souls to raise their current standard of living. They may not think it worth the effort, but that is a different proposition, which we shall discuss in a later section. If no effort were involved, very few laymen would refuse to enjoy a higher standard of consumption solely from fear that this might stand between them and salvation. Thus, if seeds of higher yield, or artificial fertilizers, were offered to the farmers of India or Burma, nothing in their religious outlook would stop them from applying these aids to their work, or from enjoying the superior fruit which would result. Religion may deter people

from seeking a living in certain ways—we shall come to this later—but it does not deter anyone from enjoying a higher standard of life which has been earned without sin.

(b) Wealth and Social Status

In most communities the attractions of asceticism are small when compared with the attractions of wealth, either as a means to power, or as a mark of superior social status.

The attractions of conspicuous consumption are a familiar theme. Goods may even be desired for this purpose even though they cannot be enjoyed. Many men acquire objects which they are not able to enjoy, solely to emphasize their status—the literature is full of pianos in houses where no one plays them, of private picture galleries owned by insensitive millionaires, of cattle kept to show tribal status instead of for meat or milk, of goods acquired for conspicuous waste or destruction, and of similar examples of goods desired for show rather than for personal enjoyment. These displays are practised particularly by persons who are moving from a lower to a higher social class, and who are anxious to be recognized in their superior status. In the industrial countries they are much indulged in by the *nouveaux riches*. In the colonial countries, where the ruling classes differ in race from the ruled, it will also often be found that the middle and upper classes indulge excessively in conspicuous consumption. This is because one form which their nationalist self-assertiveness takes is to show that they are 'as good' as their rulers, at least in being able to build as big houses, or to drive in as big cars, or to throw as expensive parties. This excessive consumption often weakens the subject people, by throwing them into debt, and by reducing the amount which they might save and invest in accumulating wealth.

Wealth is also desired as a means to power—whether it be the power of bribery, political power, power over employees, or other forms of power.

Wealth is not, however, always the easiest road to power or prestige. In modern capitalist society anyone who becomes rich can move into the highest—or nearly the highest—social circles. In many other communities this is not so. As in Hindu society, it may be the priestly caste that all others respect; or as in old China, the learned man. Elsewhere, it is the soldier; or prestige goes to birth in noble families. In any country the most enterprising young men will try to distinguish themselves in the ways which win highest distinction; if the way lies in war, in hunting, in religion, in bureaucracy—wherever it may lie, thither they will go. They will turn their thoughts towards economic activity only if the successful organizers of economic

activity can achieve the highest honours. In the early days of the Soviet Union the organizers of economic activity were despised; there was glory for the party man, or for the trade unionist, or for the scientist, but the factory manager was held in low esteem. Today all is different. The successful manager is very highly paid; is accorded special privileges in housing, and in entertainment; is no longer subordinated to workers in his own factory; and moves in the highest social circles.

This is one sense in which it is true that wealth is desired more in some countries than in others, and that the amount of effort given to producing wealth is a function of the desire for wealth. This, however, is merely a matter of degree. In every country of the world wealth wins respect and prestige, even though in some there is a time lag, and wealth may not acquire its full prestige until the second generation. Making money, nevertheless, always competes with other ways of acquiring social status, and the proportion of intelligent and enterprising young men attracted to this way of life is partly a function of the relative status of money making and of other activities. Thus some believe that the relative status of money makers is higher in the U.S.A. than it is in England, and higher in England than it is in Burma, and that these differences of status partly account for the differences in the rate of economic growth with which they correspond. Similarly, in most analyses of industrial revolutions, both of those which have come off and of those which have failed, enquire into the relative social status of the merchant class just before the revolution, as compared with the status of aristocrats, scholars and military classes. For example, differences in this respect between China and Japan are usually given as part of the explanation why their economic history has been so different in the last hundred years. Similarly, the low status of trade in Spain, compared with its status in Elizabethan England, is not irrelevant to explaining why Spain failed so signally to exploit her economic opportunities in the sixteenth and seventeenth centuries.

It was at one time the custom to associate the present high status of money making in Western capitalist countries with the changes in the Christian religion which occurred during the Reformation and the Counter-Reformation. It is true enough that mediaeval Christianity tended to condemn commercial activities as a way of life, and also regarded it as sinful for any man to want to become wealthy in order to raise his social status and that of his family. Nowadays, however, more importance is assigned to the growth of the opportunities for making money, which began to be evident from about the twelfth century, with the expansion of seaborne trade. As wealth accumulated it became more respectable, and long before the

Reformation the Christian theologians were engaged in adapting their precepts in order to show that trade and usury were not necessarily sinful activities. By the time the Reformation occurred in the fifteenth century, this adaptation was already advanced. This is an interesting illustration of the relationship between religious change and economic change, which we shall be discussing more fully in Chapter III (section 4(a)). Since religion reflects economic change, economic attitudes cannot be explained exclusively in religious terms. On the other hand, if only because of the time lag in religious change, the influence of religious beliefs upon economic behaviour is at any time of great significance.

In almost every society wealth, prestige and power are closely associated. Where societies differ fundamentally is in what the wealthy do with their wealth, and in the sources of wealth to which prestige attaches. In pre-capitalist societies rich men spend their wealth in unproductive ways, whereas in capitalist societies they invest it productively. There are not great differences in the degree of inequality of income, as between stagnating and expanding economies, but it makes a great difference to the rate of economic growth whether the rich spend their incomes on keeping retainers and on building monuments, or whether they invest it in irrigation works, or mines, or other productive activities. It is the habit of productive investment that distinguishes rich from poor nations, rather than differences in equality of income, or differences in the respect accorded to wealthy men. Again, in so far as there are differences in prestige attaching to wealth, what matters is the relative status of those whose wealth is made or represented by productive investment, as compared with those whose wealth springs from ownership or inheritance of land. In most societies the landowners constitute the aristocracy, and it is only in societies which have undergone considerable economic expansion that rich men whose wealth is founded upon commercial activities can move on equal terms with men whose wealth is founded upon land. The really significant turning point in the life of a society is not when it begins to respect wealth, as such, but when it places in the forefront productive investment and the wealth associated therewith.

Behind the differences in attitudes to productive investment lie many factors which we shall consider in more detail in Chapter V (section 2(b)). Not the least of these are differences of national aspiration. Countries which are anxious to be strong militarily, or to be independent, or to colonize or conquer other countries, usually also want to have economic strength, if only because this is necessary in war. In our own day we can see this nationalist aspiration at work in several countries. The colonial or formerly colonial countries are

busily enquiring into the causes of economic growth, and framing plans for economic expansion, partly because they want to raise the standard of living of their peoples, but also because they wish to raise their international status. The U.S.S.R. has forced through programmes of tremendous expansion at tremendous cost in human misery. Great Britain, anxious to retain her status as a first class power, is preaching the gospel of productivity, and so on. Differences between countries in their attitudes to wealth are rapidly diminishing because of the strong force of nationalist aspirations. And they will diminish all the more as the resulting study of the possibilities reveals opportunities for wealth hitherto unsuspected.

(c) Limited Horizons

We have argued so far that asceticism is not, in practice, a drag on economic effort, and also that most men desire wealth, whether for personal enjoyment, or for prestige and power, though it is also true that the prestige of wealth, relatively to the prestige of other forms of success, varies in different communities. We come now to what is probably the most important limitation on men's desire for goods, namely their limited horizons.

The point we wish to make here is that wants are limited because the goods one knows about and can use are limited. The degree of limitation varies widely from community to community, depending upon the accumulated physical capital, upon the accumulated cultural capital, upon habits and taboos, and upon sheer ignorance.

By physical capital we mean the physical environment which is necessary for the enjoyment of particular satisfactions. This may be a question of nature or of artifice. Thus people who have no access to water do not require boats. Ice cream is not popular at the Poles, nor furs at the Equator. There is not much demand for furniture among people whose houses are small and dark. Electrical equipment—gramophones, washing machines, toasters, vacuum-cleaners—cannot be used in places where no electric current is laid on. Motor cars cannot run where there are no roads, and so on. In most poor countries there is not the accumulated physical capital to support a high level of wants. The individual's house is small and there is no electricity, gas or water laid to it. And there is a similar lack of other capital. Thus the goods which the individual can buy and use are extremely restricted.

By cultural capital we mean the background of knowledge accumulated by the society. Thus, unless the individual can read he has no use for newspapers, books, and other consumer goods whose enjoyment depends on literacy. If the culture's musical appreciation is at a low level, there is little demand for musical instruments or for

musical entertainments. Similarly, the theatre, the cinema, the sports stadium, the dance hall, and similar purveyors of mass entertainment depend upon the nature of the people's culture.

Wants are limited, thirdly, by habits and taboos. At low levels of living, food and clothing account for two-thirds of income, or more. But these are just the fields of expenditure where social convention is important. Thus it is hard to get people to improve their diets, if this improvement means eating new sorts of food, or eating food prepared in new ways. And there is similarly a limited market for styles of dress which are not generally approved.

Finally, wants are limited by ignorance. In spite of the limitations of physical background, cultural background, and habit or taboo, there remain some goods which people would be willing to buy, and to make the effort to get, if they knew about them. But the process of spreading knowledge is slow.

These are among the reasons why in some primitive communities people work very little, and are not tempted by offers of employment even at what appear to be high wages. They are not tempted because they would not know what to do with the money; or more exactly because the things they could buy with the money yield low marginal satisfactions. It is also for these reasons that large increases of income are so often misspent, by western standards. The money cannot be spent as westerners would spend it. In particular, it has to be spent not so much in acquiring new goods, of a type not owned before, as in buying more of the same—more drink, or more wives, or more cloth.

If wants are limited, it is only natural that people will work fewer hours as the remuneration per hour increases. Conversely, if wants are expansible, it is theoretically possible that people will work more as remuneration per hour increases. In considering the elasticity of wants we have to distinguish between the short run and the long. In the short run a man has definite ideas of the standard of living which he has to try to maintain, this being the conventional standard of his class. If earnings increase his immediate reaction is to work less, and if earnings decrease his immediate reaction is to work more. In the longer run, however, his standards are adjustable. If life has become harder, he may lower his standard, and revert to shorter hours; if life has become easier he will raise his standard, and revert to longer hours. For, it is not only the standard of living that is conventional, but also the number of hours worked. The immediate effect of a change is to leave the standard more or less unchanged, while altering the hours substantially; whereas the ultimate effect is to alter the standard substantially while hours revert towards the previous convention.

In primitive societies extra income beyond the conventional level

cannot be enjoyed as much as in more advanced societies because of the limited range of possible uses. There will be a demand for goods if they can help to reduce further effort; bicycles reduce the need to walk; guns make it easier to kill wild beasts, for food or for protection; tanks conserve water. Extra income may also give greater power over one's fellows; by securing election to coveted positions; by bribery; by purchase of slaves; by moneylending. Or goods can be used for display; one can give big banquets; or have more wives; or buy more clothes or jewellery; build bigger tombs; or impress one's fellows by orgies of destruction, including destruction of some of one's equipment (e.g. fishing boats in Polynesia). There is also a temporary demand for useless novelties, both to satisfy curiosity, and also for display. All these motives, of course, are present in all societies, whatever their degree of development. What distinguishes the primitive from the advanced societies is firstly that in the advanced societies there can be more enjoyment of extra commodities for themselves, and not merely because of the opportunities they give for display or power or reduced effort; and secondly that the range of goods that can be enjoyed is so much wider.

The expansibility of wants increases as physical equipment increases, as the culture becomes more complex, as the hold of convention weakens, and as knowledge of new goods is spread. This last is naturally the key to the expansion of wants, since it is the knowledge of new goods which sets in motion the forces that destroy convention or change the physical environment. To understand how wants become more elastic we must therefore understand how knowledge of new goods is spread.

The process is one of imitation. New goods can be sold sometimes merely by persuasion. The domestic innovator, or the foreigner who brings the good from some other country, may try to sell it merely by persuading people to try it out, but the good is not likely to become popular until people see it in use by others. These others must usually be persons whose status in the community is somewhat superior, so that the rest of the people wish to imitate them. There are exceptions to this; television has everywhere spread more rapidly among the common people than it has among people of superior status. Nevertheless it is generally the rule that new goods are adopted first by the upper classes—if only because these can usually afford them first, and are freer from the restraints of convention—and are later taken up by the lower classes.

The speed of diffusion therefore depends, among other things, upon the relations between the upper and the lower classes. It depends on whether they live mixed up with each other, so that the poor can see what the rich consume; or whether the rich live in their own

separate part of the town or of the country, enjoy their leisure in exclusive clubs or other surroundings, and avoid social mixture with other classes. It depends, again, on whether the rich encourage the poor to imitate them, or whether there are laws or customs which deter the poor from consuming the sort of things which the rich consume. It depends also on the degree of social mobility, since if it is easy for members of the lower classes to rise, there will be some desire on the part of those who are rising to display their changing status by adopting the consumption habits of the rich. The more democratic the community, in terms of mixing together socially, the more elastic wants will be, in terms of effort.

Societies differ in the extent to which the spread of new goods is hindered by difficulties of diffusion, in comparison with other difficulties. In primitive societies it is more probably lack of equipment, and such cultural lags as illiteracy, that limit wants rather than ignorance of new goods. This was not so in the days when these countries were cut off from foreign contact. But in these days, with foreigners in their midst living at high and envied material standards, most of the people in these countries could think of ways of spending extra income, if it were not that their houses are small, and that electricity, gas and water are not available on tap. Much extra income flows into better housing and furniture. On the other hand, in a country like England, the limit to the desire of the lower classes for more goods is more probably lack of desire to imitate the better off, with telephones, or cars, or refrigerators or expensive clothes, and this is because the undemocratic social (as distinct from political) traditions of the country cause the lower classes to be more satisfied to accept their material station in life than are the corresponding classes in the United States.

2. THE COST OF EFFORT

So much for men's attitude to wealth. We turn next to men's attitude to the effort required to obtain wealth. For, given equal attitudes to wealth, men will nevertheless make unequal efforts to acquire it if their attitude to effort is different.

This is merely a way of saying that men value other things besides material wealth. They value leisure; they value their good relations with each other, which may be disturbed by a too aggressive search for wealth; they value the company of friends and relations whom they would have to leave behind if they migrated to better economic opportunities; and they have prejudices which prevent them from taking advantage of all the opportunities which they might otherwise exploit.

(a) The Attitude to Work

We begin with the attitude to work. Given an equal desire for goods men will work less if work seems more arduous to them than if it does not. This is partly an objective and partly a subjective matter.

Work is objectively more arduous if a given job exhausts one man more than it does another. This may be due to differences in his physical constitution, to differences in his state of health, or to differences in his environment. In addition work may seem subjectively more arduous if one is less well disposed to work as a way of life.

The physical constitution differs between races and between individuals of the same race. For example, when Indians were introduced to the West Indies after the emancipation of the Negro slaves, the planter preferred the Indians for the regularity with which they worked, but they preferred the Negroes for their superior physical strength. It is not certain how much of these differences in physique is due to differences in nutrition or in environment, and how much is due to biological inheritance. In any case, willingness to work and physical strength do not necessarily correlate well, as the example cited shows.

Malnutrition and chronic debilitating disease are probably the main reason why the inhabitants of most under-developed countries are easily exhausted. And this creates a chain which is hard to break, since malnutrition and disease cause low productivity, and low productivity in turn maintains conditions of malnutrition and disease. Modern capitalist firms, working in such environments, find that it pays them to take a close interest in the food and in the health of their employees. Some mining firms in Central Africa feed new recruits on improved diets for several days before sending the recruits into the mines. There are also many firms, not confined to mining, which issue free balanced rations, or provide a midday meal, or at least subsidize meals, in order to ensure that their employees are well fed. Similarly it pays to provide free medical treatment, and to ensure that the workers live in healthy surroundings. Even in advanced industrial countries, such as the U.S.A. and England, many firms think it pays them to provide cheap midday meals, especially if they have many women employees, since women especially are alleged to be willing to save on meals in the interest of their children, or of buying themselves clothes, or of other forms of expenditure.

The environment in which one works also determines how exhausting it is to work. Thus it is unpleasant to live in great cold or great heat; the body seems to function best at a temperature of between 60°F. and 75°F., with moderate humidity. This gives an

advantage to the temperate climates over the tropical climates. Similarly, students of modern factory practice emphasize the importance to productivity of correct lighting, heating and ventilation; of rest pauses; of correct seating; of the elimination of unnecessary motions; and generally of pleasant physical conditions. It is also exhausting and unpleasant to work if one's companions in work are not congenial, and this too has given the industrial psychologists food for thought. It is not easy to prescribe the conditions of congeniality. Some men like working with their relatives, while others do not; some like big groups, some small; some prefer strict discipline and regulation, while others prefer more scope for individual decision. It is hard to define the conditions for happiness in the working group, but there is no doubt of their importance.

Finally, some work is more exhausting than other work either because it requires more energy per unit of time, or because it is more unpleasant.

These factors may cancel each other out. Other things being equal, men may work longer in an exhausting job than in an easy job if the social atmosphere is more attractive in the former than in the latter. Or men in poor physical condition may work longer than men in better condition if they have also better conditions in which to work.

We turn next from differences in the strain imposed by the work itself to differences in the attitude to work.

Let us suppose that two men have the same wants, in the sense of their desire for material things; and that the jobs they do are objectively equally arduous and unattractive; but that one has a more remunerative job than the other. We cannot then conclude that the one with the more remunerative job will necessarily work shorter hours than the other. It depends on his attitude to work as such. Work is a means of acquiring goods and services, but it is also a way of life, and as such it is more attractive to some men than to others, and to some groups than to others. Everybody regards work partly as a nuisance, and partly as a virtue, but some groups emphasize more the nuisance aspect, while others hand down to their children the idea that work as such is a virtue.

These differences of attitude correspond often to differences of religion. Some religions teach that salvation, or spiritual fulfilment, is found mainly in meditation or in prayer. Others teach that it is found also or alternatively in work, both because work disciplines the soul, and also because we have a moral duty to make the best use of the talents and resources with which God has endowed us, and to serve our fellow-men thereby. There is, nevertheless, the usual difficulty in deciding how much importance to attribute to religion in economic matters. First, there is the distinction we drew before,

between what a religion expects of its priests, and what it expects of its laity. If as is so often the case, it expects its priests to pray but its laymen to work, it will diminish the community's economic effort only if it attracts excessive numbers into the priestly life. Even if the religion puts the emphasis upon meditation for the laity, and discourages economic preoccupations, there is the further difficulty of assessing how effective its precepts are, since so many men will seize opportunities for making wealth even if their religion disapproves. Behind all this lies the further question why a quietist religion is acceptable to the community. Religious precepts tend to accommodate themselves to the community's ways of making a living. Hence to say that people do not work hard because their religion does not encourage them to may not be to give a fundamental explanation; it may equally be that the religion does not at present stress work because the other circumstances of the community, environmental or social, do not bring hard work into the forefront of values.

We cannot be certain what these other circumstances are which produce differences in the attitude to work. Biological differences are alleged, as also the unpleasantness or productivity of the work, and also the social structure of the community. In analysing these factors it is important to remember that there is always a lag between an attitude and the conditions which have produced it. That is to say, if we want to know why a community believes what it believes, we must look not to its present biological composition, or social structure, or what you will, but to conditions decades or centuries earlier, when its traditions were being formed.

Let us take first the biological factor. Some individuals have more energy, or more disposition to work than others, because of a biological inheritance not related to their environment. There are millions of people who believe unshakably that the proportion of these biologically industrious persons is greater in some races or countries than it is in other races or countries. There are also millions who believe that the distribution of the biologically industrious or lazy does not vary from race to race, and that the observed differences can all be explained in terms of physical environment and cultural tradition.

The great majority of the world's scientists deny that there is acceptable evidence linking human attitudes with racial biology. If we confine ourselves, however, to localities, while we are still devoid of evidence, we have at least some plausible theories. Thus, if a country is subject to repeated disasters or crises of a kind where the biologically energetic survive, while the rest perish, then it follows tautologically that the biological inheritance of this community will constantly improve in terms of energy. The difficulty of course is to

define the circumstances in which the difference between survival and death depends upon biologically inheritable energy: in most crises survival owes as much to upbringing, to cunning, and to luck. Again, we have the theory that a country peopled by immigrants will show more energy than one which has been settled for a longer period (all countries are peopled by immigrants) because immigrants tend to be more enterprising than those they leave behind, and because the hardships of migration and settlement tend to weed out the unfit. The difficulty here is to be certain that the biological factors are dominant in determining who becomes a successful immigrant. Immigrants certainly tend to be more energetic than those they leave behind, or than those they come to live amongst, but this may be merely because the stresses to which they are subject are greater, and so call forth greater performance.

Biological explanations of differences in group attitudes can neither be accepted nor be rejected. We can certainly reject the idea that one race is superior to another, in the sense that all members of one race are superior to all members of another in performance tests. But as to the distribution of superior, ordinary and inferior between different groups we can say nothing at present. Our explanations of group differences have therefore to be confined to differences in physical and cultural environment.

We come then secondly to the unpleasantness of the work. We have already seen that work may be particularly arduous in itself, or because of the physical condition of the worker, or because the physical or social environment in which it has to be done is uncongenial. We argued then that people might be expected to work less in these circumstances. The argument is reversed, however, if we are asking not how much work is done in pleasant compared with unpleasant circumstances, but rather what attitude to work grows up. For, if the work is unpleasant, people may have as it were to force themselves to do enough of it to keep themselves alive. And those who let themselves be put off by its unpleasantness may not survive. In these circumstances parents may begin to teach their children that work itself is a virtue, and is something to be done for its own sake, perhaps even because it is unpleasant. This tradition may be handed down, and may survive changed conditions, so that even when the work to be done ceases to be unpleasant men may continue to work with as much grim determination as before.

Exactly the same line of argument can be applied to work that is relatively unproductive. Thus one may reason as follows. In countries where it is easy to make a living, work is seldom regarded as a virtue, since men's habit is to make a virtue of necessity. At the other extreme, countries where it is exceptionally hard to make a living

may discourage effort. Intermediately, work is a virtue in countries which are hard, but not too hard. That is to say in countries where it is possible to attain a good standard by reasonable effort, but where without such effort men will perish. Hardness may be due to over-crowding, to soil of only moderate fertility, to recurrent drought or hurricane, or to other misfortune. In such countries children will be taught that work is a virtue, and will be shown the poverty of persons who failed to keep at their tasks; and they in turn will hand the tradition down to their children.

All explanations based on environment have, however, to face the fact that attitudes are not constant; the same country displays opposing tendencies at different times. Explanations of attitudes have therefore to be historical as well as environmental; that is to say, if they are relying upon environment they have to show when and why the environment changed to bring about the differences which they are explaining. This is particularly damaging to those explanations of attitudes which rely upon climate, since the same country shows quite different attitudes at different times in its history; this is why some of these explanations seek to show changes in climate, for example in accounting for the decline of the Roman Empire. Most of the environmental explanations of traditions of hard work involve some sort of historical shock to the community, which has challenged the people to display their best qualities of endurance--such as defeat in war, or the onset of famine, or the hardship of a great migration. However, it must take something more than a great historical hardship to stiffen the will of a people, or else it would seem to be a mere accident whether a community subjected to hardship becomes despondent and discouraged, or alternatively finds courage and inspiration therein.

A different kind of explanation connects the community's attitude to work with the behaviour of its upper classes. According to this explanation work is more highly regarded by the people in general in those communities where it is the tradition for everyone to work than it is in communities where the rich traditionally live in idleness. For men imitate their social betters, and if these find it degrading to work, others also will work as little as they can. For example, in the slave communities of the New World, the plantocracies were much given to going on picnics and to having a good time, and there was much absentee ownership. The middle and working classes of these communities to this day show a greater propensity to consume lavishly than they do to work, and this may plausibly be explained by saying that they have inherited the idea that work is fit only for slaves. The distinction we are making is not between equalitarian and inequalitarian societies, but between those where the rich work and those

where they live in idleness. Thus in the United States the rich usually work, if only from force of habit, whereas in England there is a long tradition, now almost dead, that the ideal life for the rich is one of hunting and shooting and fishing. It is not the case that the American workman works longer hours than the British workman—actually he works shorter hours—but there is some evidence that he works more intensively while he is working. Some people attribute this difference to different attitudes to work, and trace these differences back to different ideals as to how successful men should spend their time. The facts in this comparison are all disputable, but the comparison illustrates the line of argument.

Whatever the reasons may be why some people object to work, as such, more than others do, the fact remains that there are significant differences in this respect both between individuals and between groups. These differences show themselves not only in the number of hours work done at any time, but also in the reaction to increases in the productivity of work. In practice, the long run effect of raising the yield of work per hour is always to reduce the number of hours done (in theory either result is possible). We can see this whether we compare industrial countries, in which case we shall find in general that those with the highest productivity per man also work the shortest hours; or whether we compare hours in the same country as its standards of remuneration have increased. This is a natural reaction. Since leisure is one of the good things of life, men naturally use extra productivity to buy some extra leisure as well as some of other things. Besides, leisure and goods are complementary in enjoyment, since the more wealth one has, the more leisure one needs to enjoy it in. In the long run men work harder if wages are low than they do in more favourable conditions—provided that real earnings are still high enough to maintain good health and productivity. The extent of the difference between groups in this respect depends simply on the intensity of their desire for wealth, on the one hand, and on the intensity of their desire for leisure on the other hand.

When the entrepreneurs of Western countries first arrived in the more primitive countries they had great difficulty in getting labour. The native peoples were enjoying their conventional standards, and could not be tempted by offers of extra income. It was therefore thought necessary to resort to means of compulsion. Slaves were bought; or labour was brought from far countries on indenture. Natives were smoked out of their indolence by levying high taxes upon them, which had to be paid in money, which again could be had only by working for the foreigner; or by prohibiting them from growing commercial crops, or by taking their lands away; or by compelling chiefs to send young men to work in mines or on planta-

tions. These compulsions (except slavery) are still to be found in one or other of the African colonies of all the European powers, but they are not so necessary now as they were formerly thought to be. For imitation has done its work. The Africans have acquired new wants, and are willing to work to satisfy them without compulsion.

The ruling classes in any country are usually anxious that the people should be willing to work steadily and persistently, say for an average of forty hours a week or more. Capitalists and employers like the population to be hardworking, because it is easier to fulfil their industrial ambitions if labour is plentiful, and also because their profits increase as output increases. Governments, too, whether they be democratic or authoritarian, conservative or radical, like the people to work because the yield of taxation is greater with greater output; governments need large revenues whatever their purposes may be, whether they be the 'democratic' purpose of improving education, public health, communications and other public services, or the 'imperialistic' or 'anti-imperialistic' purpose of creating large military forces, or merely the 'corrupt' purpose of lining the politicians' pockets. (And so it happens that 'radical' governments, elected for their sympathy with the desire of the workers for shorter hours, usually revert, once they are firmly in the saddle, to appealing to the people for longer and steadier work.) Humanitarians, who have no personal interest in the matter, usually share the same sentiment that it is good for the people to be industrious, because humanitarians abhor poverty and its results, and prefer the people to have a reasonable standard of living.

A willingness to work long hours is not, however, a necessary condition of economic growth. It is obvious that the standard of living will be higher if people work more than if they work less—subject to their not working so hard as to reduce their productive powers—but it is not obvious that the standard of living will also grow faster. Our interest is not in the absolute level of output, but in its rate of growth. Apart from minor changes of hours, output usually grows not because people are working harder, but because they are working more productively, using more knowledge or more capital, and taking more favourable opportunities for specialization, for trade, and for investment.

Opportunities for greater productivity exist whatever level of work people may fix upon. It is true that some of these opportunities depend on willingness to make regular effort; factory routines, for example, require regular attendance and regular hours. Other opportunities also depend upon flexibility—on willingness to work at night, or on week-end shifts, or even at call. These opportunities, however, do not depend on the number of hours of work each person

is prepared to do in a year; both regularity and flexibility are consistent with each person stipulating beforehand upon a limited total number of hours. Some opportunities for greater production will also be missed, in the sense that some industries may not come into existence at all because people will not work in the way these industries require; but this is quite consistent with their working very productively in other industries whose working habits are more congenial.

Economic growth requires also that people should be willing to work conscientiously, but this is not the same thing as being willing to work long hours. A man should be willing to give his mind to what he is doing; to do it properly, to the best of his ability; and to be punctual in starting and in delivery. These qualities are sadly lacking in some communities where people seem to attach little importance to faithful fulfilment of their contracts. In primitive societies this is usually due to the strangeness of the new demands now made upon the individual. Where people are accustomed to working in the fields, at their own pace, without clocks, it is hardly a matter for surprise if they are unpunctual, or irregular in attendance at work. Similarly, where people are accustomed to relationships based upon kinship and upon status, it is difficult to get used to obligations which are exclusively pecuniary, and it may take two or three generations before the new contractual relationships acquire a new and generalized moral sanction. In more advanced societies, the community may be torn by internal dissensions: the 'employed class' may dislike the 'employing class', or the sellers may have a grievance against the buyers, so that there is no sense of moral obligation towards the other contracting parties. In a competitive society these things tend to sort themselves out with time. Those individuals who give the most conscientious service succeed (other things being equal) to a greater extent than the less conscientious, and their example is increasingly imitated, until the new moral tradition is firmly forged. But societies are not always competitive, and the forces moving in these directions may be weak.

Now it may be argued that willingness to use one's opportunities is positively correlated with willingness to work long hours, in the sense that people who cannot take the trouble to work long hours will also not take the trouble to seek out the most profitable opportunities, or to work regularly and conscientiously. The argument is not, however, very plausible. People may be very quick off the mark in seizing the most profitable opportunities, even though they are firm in their decision to work shorter hours than their fellows. It is, for example, hard to get the farmers in tropical countries to work as many hours as industrial workers in temperate countries, but this

does not prevent them from seizing opportunities to use better seeds, or fertilizers, or to plant more profitable crops. It has not prevented the Gold Coast farmer—who is said, no doubt erroneously, to be one of the laziest farmers in the world—from switching from subsistence production to creating the largest cocoa industry in the world, over a short space of time; or prevented the farmers of Uganda or of Indonesia from taking enthusiastically to cotton and to rubber respectively. It might even be suggested that the less one likes work the more likely one is to seek out opportunities for making one's work more profitable so that one may be free to work less. But this suggestion has no more plausibility than its converse. There is probably no correlation, positive or negative, between willingness to work long hours, and willingness to seek the most productive opportunities.

Again, we have already seen that as productivity increases people work shorter hours. If their demand for leisure is very high relatively to their demand for goods they will, in the extreme case, reduce their hours as fast as their productivity increases. Their standard of living will then fail to rise, despite increasing productivity. Growth will nevertheless be occurring. We have defined growth as taking place if output is increasing per hour of work done. This is the reasonable definition: it would be silly to deny that economic growth was taking place merely because people were preferring to use their increasing productivity to buy more leisure instead of to buy more goods.

If there is any correlation between industriousness and economic growth the link will be found in greater ability or willingness to make productive investment. Those who work hard have presumably greater income and less time for consuming it than do those who work less; they may therefore be in a better position to invest. It is not enough that they should be willing to save more. If peasants save by buying gold and jewellery, economic growth is not stimulated. Similarly if they save to buy more land, the effect is not to increase agricultural output, but merely to change the price and ownership of land. What matters to growth is the formation of productive capital, which is not necessarily associated either with willingness to work or with willingness to save. There is in fact no evidence that hard work and productive investment necessarily go together; the Chinese, for example, have for centuries had the reputation of being among the hardest working peoples of the world, but though the population of China has increased much less rapidly than that of Europe this hard work has not resulted in economic growth. When we are told of two different races living together that one is more industrious than the other, and that this is why it is more prosperous, we will usually find, on closer examination, that the real difference is that one is engaging

more extensively in productive capital formation than the other. Hard work and capital formation are an excellent formula for economic growth, but whereas capital formation without hard work will also produce substantial growth, hard work without capital formation makes little contribution to development.

Willingness to seek out and to seize opportunities, and to make productive investments is not a function of hours of work done, but it certainly relates to the intensity of thought which one gives to one's opportunities, and it may have high costs in nervous energy. Business men get stomach ulcers not so much because they work long hours as because they worry about their work; it takes a good deal of nervous energy to be always thinking of ways of saving another sixpence, or making another sixpence, as they are supposed to do. And it is, of course, an open question whether the game is worth the candle, that is to say whether it is better to think seriously about one's economic chances, and to progress materially, or whether it is better not to give much thought to such matters and to stay poor. In some societies economic growth is thought to be worth while for its own sake, and young men are encouraged to try to get on in life; whereas other societies prefer to give their minds to other things, to making war, to the arts, or just to the enjoyment of good talk or other pleasures.

While it is true that the individual is more likely to succeed in achieving greater productivity if he thinks the effort worth while, it is seldom the case that a large proportion of any community is keenly sensitive to its chances, and neither is it necessary for growth that the masses of the people should be so inclined. There must be a few people willing to pioneer; once they have pioneered successfully, the others will usually follow in their footsteps without giving much thought to the matter—provided they are not prevented from doing so by barriers of caste or race or religion. It is in this sense that growth depends on alert leadership. Of course, the larger this alert minority, and the more scope it is allowed for manoeuvring, the more rapidly the community will grow economically, and it is in the difference of proportions and of scope that the essential difference between societies is to be found.

(b) The Spirit of Adventure

We are leaving until the next chapter the analysis of the scope which society gives to those who wish to manoeuvre economically; in this chapter we continue to examine the individual's willingness to do so. This reveals itself in many ways, of which we shall now consider the most important. These are willingness to operate with a mind free from convention and taboo, willingness to take risks, and

willingness to move from one place to another, as the occasion demands.

Convention and taboo may restrict opportunity in various ways. For example, it may restrict the use of resources. A well known instance of this is the Hindu attitude to the sacred cow; beasts of inferior quality cannot be killed, or restrained from breeding; and the number of animals is so excessive that they are a drain on the farmers' resources. A similar instance is the prejudice which prevents most Western communities from using human excrement for manuring their fields, and which therefore means that valuable minerals extracted from the soil are annually poured into the sea. Every community has prejudices of this sort, which prevent it from using to the full resources which other countries would be glad to have, but some are much more ridden with taboos than others.

Probably the most important prejudices hampering economic development at the present time are the prejudices about livestock. Subject to what is said in the next chapter about the disincentive effects of faulty agrarian structure, it seems to be the case that peasant farmers are everywhere anxious to improve their material conditions, and responsive to innovations which have this effect. They gladly adopt new seeds, or fertilizers, or make use of water provided by new irrigation facilities, or turn over to more remunerative commercial crops. The suggestion that economic development is prevented by farmers not having worldly values is largely a myth, since farmers are almost everywhere an acquisitive class. It is not, however, at all mythical in relation to livestock. Both in Asia and in Africa there are some farming communities which take a non-commercial attitude to livestock, fail to exploit their cattle to best advantage in terms of work, meat and milk, carry excessive numbers of useless beasts, and ruin themselves in the process. This is a great nuisance to economic development because such development is tied up to a considerable extent with progress in agriculture, which in turn depends largely upon a better integration of animal and arable husbandry.

Next in importance are the taboos relating to family life, especially those relating to the sort of work which women may do (Chapter III, section 2(b)) and those relating to birth control (Chapter VI, section 1(a)). Fortunately, there is reason to think that these prejudices are dissipated by the process of economic development itself, but they can seriously keep down the standard of living in the early stages of economic growth. Prejudices in relation to livestock and in relation to the family are currently religion's most deadly contribution to the maintenance of poverty.

There may also be conventional ways of doing things, which have

to be followed on pain of social disapproval. Thus in some countries agricultural practices are controlled by priests, whose mysteries tell when and how and where to plant, and whose ritual ministrations are essential to success. As civilization progresses technology escapes from the control of religion, but there are always other dogmatists lying in wait for it. The regulation of techniques by the mediaeval guilds is not different in kind from the orthodoxies which hamper scientific progress, even in our own day. And the ambitions of the state to regulate techniques are exemplified equally by Colbert's seventeenth century edicts and by the Lysenko purge. It is impossible to have an absolutely open mind on how things should be done, and to be forever willing to experiment in all directions, but some societies are more successful than others in widening the freedom for individuals to experiment.

Then there are the prejudices relating to occupations. Early mediaeval theologians thought that the merchant's calling was virtually incompatible with the Christian life, and were even more certain of the sinfulness of moneylending. How effective these pronouncements were in practice is open to question; at any rate they were modified continuously as opportunities for profitable trading increased with the growth of towns. In the same class (though its origins were different) was the contempt for trade which was felt by the Spanish aristocracy, in the sixteenth century, and to which some historians attribute some part of Spain's failure to exploit successfully her ownership of and her easy access to the New World: certainly Queen Elizabeth and her nobles, if they felt any such prejudices, were not prevented thereby from sharing in trading adventures. In every community some occupations have lower status than others. Usually, however, there are plenty of people of low social status for these low status jobs. Sometimes, however, a change of conditions brings it about that these are just the jobs which now offer great opportunities for economic expansion, and the prejudice then becomes a brake on growth. Thus, it is unfortunate for England if, as is alleged, a social stigma attaches to coal mining, or if scientists who engage in technology have much lower status than scientists engaged in 'pure' research, or if a business career is ranked low in preference by good honours graduates from the universities. For, since the prejudices of one community are not the same as those of another, the chance which one community rejects is often taken instead by its rivals. Just so the predilection of Negro West Indians for the prestige of the liberal professions is one reason why, to their dismay, it is Indian and Chinese West Indians who are gaining increasing control of business.

Even within occupations there are prejudices against doing various

kinds of work. One of the most striking examples is the often reported refusal of engineers in under-developed countries to do work which would soil their hands, or of persons in administrative positions even to move a chair for themselves. The doctrine that manual work should be done only by people of low social status is well entrenched in all those communities where considerations of caste or social prestige bulk large. Often the fundamental explanation is over-population. In over-populated countries the tradition is established that there is a moral duty on the part of the better-off to provide as much employment as they can for the not-so-well-off, and hence, if people of higher status are seen doing manual work they lose respect—not only because they are lowering their caste, but also because their refusal to give the work to someone else shows either that they are mean and heartless, or else that they are not-so-well-off as they would like it to be thought. Such traditions are very appropriate to static over-populated communities; but they do not mix well with the philosophy of individualism and self-help with which more dynamic societies are associated.

Men differ also in their willingness to have economic relations with strangers, and in whom they consider to be strangers. Opportunities must be restricted if one can trade with, or employ, or lend money to one's relations only, or members of one's caste only, or only to people from one's own village, or country, or sex, or race, or religion, or political party, or whatever the restriction may be. Differences here are also related to differences in the impersonality of economic relations. In modern capitalist communities a contract is based primarily upon considerations of price and quality, leaving aside considerations of kinship, or of the personal merit, welfare, or good fortune of the party with whom one is doing business; but in most other communities a contract is to a greater extent a form of personal relationship, which originates in or creates personal ties not inherently connected with the transaction itself. Even in modern societies a personal element has to enter into many business relationships; some kinds of contract it is wise to make only with persons whom one can trust to execute them faithfully and without deceit; it may also be necessary to give special personal favours in order to get special personal favours in return (especially in imperfectly organized markets where supply and demand are not always in equilibrium); and it may sometimes be necessary to support one's own relations, or the members of one's race, or sex, or some other group to which one belongs if mutual protection is needed for economic self-defence. Apart from these cases where the personalization of business is an advantage to the person making the contract, on economic grounds, there is much personalization based only on sentiment or on preju-

dice. Whatever the case may be for it in its own terms—of kinship, or politics, or religion, or else—there is no doubt in these cases that impersonal economic relationships would offer wider opportunities for economic growth.

We are dealing with a phenomenon which causes much sadness to those who regret the passing of old ways. Most primitive societies rest upon status. Men have rights and expectations which depend upon their status in the community, and not upon their competitive performance in the market. When therefore services which they expect from others are sold instead to the highest bidder, or goods to which they have a traditional claim pass instead into the market, they cry out against the disintegration of old customs and institutions based upon personal relationships, and the substitution instead of what they call greed and lack of respect. The change from status to contract is revolutionary in any society. The old code of values goes, and the community may indeed disintegrate, even in the moral sense, until new traditions form and gain respect. It is not only the economic relations that are affected; the decline of status in economic affairs corrodes also the old ideas about status in political organization, and in the family, and simultaneously challenges the religious precepts which safeguarded the old rights of status, and thus religion itself. Reintegration does not therefore occur until the community has found new kinship and new political arrangements which accord with its new contractual outlook, and a new or reformed religion or moral code to sanction the new arrangements. This process took a long time to work itself out in Western Europe; it took some time to formulate a new political philosophy, based on the idea of the social contract; and to reconcile a contractual outlook with a religion based on revelation and authority. The process is not yet completed. Indeed, the twentieth century shows some tendency to return from contract to status, by way of legislation prescribing the rights and duties of various classes, and denying freedom to make contracts of employment or tenancy or hire purchase or sale except on terms stipulated by law. The less developed countries are only just entering upon this cycle. Some African societies already have political and marriage systems based on contractual ideas. But in most communities outside the Western world adaptation to impersonal economic relations cannot be done without resistance on the part of those whose status is thereby challenged, or without a general upheaval of ideas.

Another aspect of the adventurous spirit which causes sadness to some is the effect of competition in economic life. The competitive spirit runs through all human activity; men take pleasure in showing off their prowess in games, or hunting, or sexual attraction, or sing-

ing or what you will, and in some spheres, such as in the struggle for political power, or for leadership in religion or in social status, the struggle may be bitter, merciless, and unlimited. There is always, however, some sort of code within which competition is supposed to operate—such as the code which controls the struggle for political power—and there are always those who regard the competitive instinct as a danger to the soul, and who are anxious to curb it as much as possible. These sentiments apply as much to competition in economic life as to competition in any other sphere.

There is not much room for economic competition in a subsistence economy where there is little specialization or trade, but competition is found in every sphere of a market economy however hard monopolists may seek to eliminate it, since the buyer always has some freedom to decide to spend his money differently. Competition exists even though the sellers do not want it, so long as the buyers are free to choose between them—a choice which is narrowed if all the sellers in 'the same industry' collaborate, but which does not disappear since competition between 'different industries' (e.g. television and cinemas) may be just as important. If in addition some sellers are anxious to get a larger share of the market, whether by offering better quality, or by offering a lower price, by advertising, or merely by dishonesty, the competition will be even more acute.

Competition is almost certain to hurt somebody. Thus the factory worker who produces more than the norm may hurt the others, because he shows up their slackness, or because the employer is thereby encouraged to raise the norm, or because he leaves less work for the others to do; these results are not inevitable, but they are possible in some circumstances. Similarly in the industry the firm which tries to capture a larger share of the market puts a strain upon all the others, and may drive some bankrupt. One cannot make omelettes without breaking eggs.

In some societies the weakest goes to the wall, and few tears are shed over him. There is a certain ruthlessness towards established expectations in such countries (otherwise widely different) as the United States, the U.S.S.R. and Japan, which it is hard to dissociate altogether from the relatively high rates of economic growth which these countries have achieved in recent decades. In some other countries there is a greater desire to ensure that expectations are not rudely frustrated; it is 'bad form' to be too aggressive, or to work too hard, or otherwise to cause serious loss to one's rivals. We shall have to discuss this subject more fully in the succeeding chapter, when we come to institutional restraints upon effort; here we note merely how widely attitudes towards competition differ.

Another aspect of the adventurous spirit is the attitude towards

risk. Willingness to bear risk is partly a matter of temperament, partly a matter of what one can afford, and partly a matter of the tradition in which one has been raised. If we are comparing the attitudes of different groups we must ignore the question of temperament. It is possible that different groups of men inherit a biological propensity to risk in different proportions, but we know no more about this than we do about group differences in the biological inheritance of the propensity to be industrious.

The more secure one's economic foundation is, the more one can afford to risk. Thus a rich farmer can try out new seeds extensively, without knowing how well they stand up to conditions of drought or flood or other agricultural risks. But farmers who live near the level of subsistence are extremely reluctant to give up seeds which they know will give some yield in many varied conditions, however poor this yield may be on the average, since they simply cannot run the risk that the new seed, however bountiful on the average, may in one year fail, and reduce them to famine. On the other hand, the very poorest people, who have nothing to lose, may be more willing to try a chance than the more fortunate, who would lose if the chance failed. Thus, if there is a rumour of a gold strike a hundred miles away, the unemployed are more likely to be attracted than are people who have already a moderate source of income to which they could not return if they found no gold. More risk-taking is therefore to be expected in fairly rich or in very insecure communities than in those which have a modest competence.

The difference of traditions is probably more important. In the schools of twentieth century England many a Speech Day orator urges those who are graduating not to go for the secure jobs, but to cultivate a spirit of adventure; touching perhaps also on Drake and the Elizabethans and the splendid record of British enterprise. Similar speeches were not made in mediaeval England; and are not made in contemporary Morocco or Siam. As with work so with adventure; there are countries where the young are taught that it is a virtue, and countries where they are not so taught. It is equally difficult to account for the difference of traditions. Presumably countries which live by hazardous occupations learn to fear risk less than other countries. But all occupations are hazardous; the farmer's life in India, with uncertain rainfall, is as hazardous as is a life spent in fishing or in foreign trade. Whatever the origin, the tradition probably feeds on itself, in the sense that countries which have behind them a career of successful risk-taking develop a degree of confidence in the chances of success which other nations lack.

One aspect of risk-taking which is particularly important in a developing economy is willingness to change one's occupation. In

the extreme status-type economy the caste system seeks to compel a man to pursue only the trade into which he was born, and his father before him (except that all castes may farm); and even in societies which do not recognize caste, strong family feeling and filial sentiment may keep sons tied to an occupation for which they have no talents, or for which the demand is clearly shrinking. Family feeling apart, one may also have a special affection for a craft in which one has been trained, and may have a natural reluctance to leave it, even for some more profitable occupation. These again are matters where traditions vary between communities, some taking it for granted that a man will stick to one trade all his life, preferably his father's, while others encourage a more adventurous spirit.

Changing one's occupation is particularly hard when it involves leaving one's home and taking up residence somewhere else. Yet growth constantly demands movement of this kind: new resources are discovered in sparsely populated districts; or the resources of old districts are worked out; or some change in demand or in supply alters the assessment of known resources. In these days some governments are anxious to take work to people instead of people to work, and this may find economic justification if new industries would fit into the old location just as well as into any other. It is sometimes also supported on the basis that the old location has accumulated capital in houses, power supplies, schools and other public services, which it would be wasteful to replace elsewhere; but this argument, though it has some validity, is not as forceful as it might be since capital wears out and has to be replaced somewhere sometime. In any case, industries which depend upon such natural resources as the soil, minerals, or water have little choice but to go where these resources are to be found.

Willingness to move is partly a matter of sentiment partly a matter of pressures, and partly a matter of the attractiveness of the place to which one might move.

The sentiment may lie in one's attachment to one's relations, or one's friends, to one's home, or to one's district, or to one's way of life. The biggest break is involved if the migration involves a new way of life; such as ceasing to be a farmer in a small community, in order to become a factory hand or a miner in a large community. Here also tradition helps. After a decade or so in which many have made the change, their successors become used to the idea. News travels home of what conditions are like in the other place, and knowledge may dispel fear, and may even kindle enthusiasm. There is not much more to be said about sentiment than that peoples who are used to moving move more than those who are not.

To start the habit in a big way usually requires some pressure. In

those agricultural countries where everybody has enough land to live on it is very difficult to get people to move even to much better opportunities, unless something happens to reduce their security at home This may be the onset of famine, or of over-population, or of war or of some natural disaster Or as in Africa, governments may add the pressure of taxes, of taking away people's land, or of compulsion, to force Africans out of their reserves into wage earning employment The English classical economists often discussed the effect of primogeniture, and concluded that its effect was to force all but the heir to be more enterprising and more mobile The strength of family connections is probably also important if one can rely on a wide circle of relations for support one is less likely to make great efforts for oneself, and it is probably not without significance that extended family systems and rapid economic growth are seldom found together In industrial communities people tend to move out of areas of heavy unemployment if there are other expanding areas into which to move, the existence of unemployment insurance may reduce their mobility somewhat, but most men prefer to be employed rather than unemployed and in any case the difference between unemployment pay and wages is substantial for all but the lowest paid workers

How important it is that the place where the migrants are wanted should be attractive is shown by the failure of many programmes The migrant needs assurance of a friendly reception, of reasonable accommodation, of economic prospects, and of a chance to settle in to the new life The great mining companies of Central and Southern Africa, who needed hundreds of thousands of Africans to move out of their reserves for work, offered at first hardly any of these attractions, so it is not surprising that pressures had to be exercised on their behalf Good pay, good housing to which wives and children can be brought, prospects of promotion and the establishment of the amenities of permanent town life now figure to a greater extent in their programmes, and have almost eliminated dependence on pressures in the reserves We can see exactly the same attitudes at work in the suburban housing estates, to which the great industrial towns of the Western world are trying to move populations out of congested slums in city centres Often those who have been moved demand to go back They say they miss their friends and the city streets and noises in fact they dislike the much longer journeys to work, and the fact that there are not enough cinemas and public houses and other institutions round which to build a new community life There is much less frustration when the new suburbs have their own factories, when groups of friends and relations are moved together, and when the new suburbs have all the facilities needed for creating a new community life Still another example is the failure of

so many schemes for land settlement. Often settlers are given land without prior preparation of roads or water supplies, they are chosen haphazardly, without regard to agricultural experience, or to capital, and they are left to fend for themselves without advice, assistance or organization. Indonesian experience is particularly instructive Prior to 1937 the government offered to transport Javanese to Sumatra, where it gave them land and financial assistance, but very few would go Thereafter it was arranged that settlers should arrive just before the harvest, and should spend their first weeks working as labourers for previous settlers and lodging with them This enabled them to earn some money, to get acclimatized to the new country in various senses, to get advice on the spot, and to make useful contacts The system also ensured that the new settlers would in their turn be assisted with their harvests The result was that the annual number of migrants nearly doubled between 1936 and 1940, and was increasing every year, in spite of the fact that the government also greatly reduced the amount of financial assistance it gave to the migrants

While it is true that the individual is more likely to succeed if he is willing to be mobile, it is not necessary to economic growth that everyone should be mobile Economic conditions change relatively slowly, and on the fringe, so that it is enough that some proportion of the people, usually a small percentage in any year, should be willing to move Even this small percentage, however, will not be forthcoming unless there is a combination of the attractiveness of the new areas with either a tradition of mobility or strong pressures at home

Much the same remark applies to all other aspects of 'adventure' Economic growth requires not that it should be adventurous, but that there should be an adequate supply of innovators This in turn is partly a matter of the rewards and prestige which can be gained by successful innovation In every community there are some men whose natural bent is to experiment with new techniques, new products, or new economic forms, in defiance of established opinion or of vested interests Some societies admire and encourage such people, while others regard them as rascals to be suppressed but economic growth depends very largely on the extent to which the social atmosphere nourishes such people, and gives them scope We shall be returning to this subject in later chapters

3. RESOURCES AND RESPONSE

The most important natural resources are climate, fresh water, fertile soil, useful minerals, and a topography which facilitates trans-

portation. None of these features can be defined as rich or poor in any absolute sense, since what is considered valuable today in any one of these categories, may be considered useless tomorrow. The value of a resource depends upon its usefulness, and its usefulness is changing all the time through changes in taste, changes in technique, or new discovery. Coal was not a valued resource until men learnt to burn it; neither can anyone speak with confidence today as to its value in two hundred years' time. The Severn estuary was regarded chiefly as a barrier until the discovery of America made Bristol temporarily one of the greatest ports in the world. A hundred acres of fertile soil in Jamaica were once a fortune, but are not now so highly regarded since many other lands suitable for growing sugar have been opened up. Accordingly, when we say that a country is rich in resources the statement has meaning only in relation to contemporary knowledge and techniques. Similarly, a country which is considered to be poor in resources today may be considered very rich in resources at some later time, not merely because unknown resources are discovered, but equally because new uses are discovered for the known resources.

Bearing this temporal limitation in mind, it is interesting to enquire to what extent the rate of growth displayed by any particular country has resulted from the richness or poverty of its natural resources. There is an obvious sense in which the one depends upon the other. Other things being equal, men can make better use of rich resources than they can of poor resources, hence we expect those countries whose opportunities are greatest to show the greatest rates of development. Much of the world's economic history can be written very simply in these terms. In the earliest days when agriculture is the chief activity, the fertile river valleys show the greatest progress. At other times one can see how other places come into prominence through the discovery of minerals (e.g. Malaya's tin) or of new ways of using them (Middle East oil, Britain's coal); or through changes in trade routes (the ports of Western Europe after 1492); or through new means of transport (e.g. Bangkok's airport). The extent of a country's resources is quite obviously a limit on the amount and type of development which it can undergo. It is not the only limit, or even the primary limit. For most countries could make better use of their existing resources than they do. Given the country's resources, its rate of growth is determined by human behaviour and human institutions: by such things as energy of mind, the attitude towards material things, willingness to save and invest productively, or the freedom and flexibility of institutions. Natural resources determine the course of development, and constitute the challenge which may or may not be accepted by the human mind.

The more fundamental sense in which one probes into the relationship between resources and growth is therefore to enquire whether there is a connection between richness of resources and the quality of the human response. Given the effort which human beings make, the same effort will produce more rapid growth in rich than in barren countries. But is there also some law by which greater effort is induced in the richer than in the more barren countries, or is the reverse the case?

The question can be answered definitely only for one 'resource', namely accessibility, and very much less definitely, or not at all, for other resources. Accessibility is a resource in the sense that it stems from geographical features—the surface layout of the country, its rivers, its access to the sea, the quantity and quality of its harbours, and the presence or absence of impassable barriers such as high mountains, deserts or impenetrable jungle between the country and the rest of the civilized world. Accessibility plays a decisive part in stimulating economic growth. It stimulates trade, therefore widening the range of demand, encouraging effort, and furthering specialization. It also results in a mingling of peoples, with different customs and ideas; and this keeps the mind active, stimulates the growth of knowledge, and helps to keep institutions free and flexible. Degree of accessibility must play a large role in explaining the economic vigour of any people.

Next in degree of doubtfulness comes climate. It seems to be the case that the human body functions best in a temperature of 60° to 75 F., with moderate humidity, but the effects of climate on the human mind are not so clear. It is clear that extremes of temperature are unfavourable. Nevertheless, civilizations have flourished in the past in countries varying very widely in their climates, from the hot river valleys of the sub-tropics, to the high altitudes of Mexico and Peru, or the cold and dark winters of Northwestern Europe. Because economic growth is currently most rapid in the temperate zones it is fashionable to assert that economic growth requires a temperate climate, but the association between growth and temperate climates is a very recent phenomenon in human history.

As for other resources, such as a fertile soil, the argument turns on whether relative hardship stimulates people's wits, or exhausts their mental energies. There is, of course, an obvious relationship between resources and the growth of knowledge, namely that one learns to use only that which one has. Coal technology does not develop in a community which has no coal, nor architecture in a community without suitable stone. But, given some resources—or there would be no community—it seems very hard to establish any clear connection between the richness of the resources and the vigour of the com-

munity. It cannot be done by logical argument, since rich resources might equally well promote laziness or vigour; and it cannot be done by appealing to history, since countries with similar resources show dissimilar vigour, and since, also, the same country shows dissimilar vigour at different times in its history without any obvious change in its resources.

Some play has been made with an alleged relationship between character and occupation. Farmers and miners, it is said, are 'dull'; fishermen, merchants, and sailors are 'adventurous'; craftsmen and urban dwellers generally are 'ingenious'. On these characterizations one can build a relationship between growth and resources such that the countries showing most rapid growth will be those whose inhabitants take to making a living by the sea, or by manufacturing commodities which they export in exchange for food. This gives actually an inverse relationship between resources and growth, since the peoples who take to the sea or to exporting manufactures are usually those who have not enough fertile soil to feed themselves exclusively by home production. This kind of generalization fits a few cases--the Phoenicians or the Greeks at one stage of their history only--but it does not explain others -the Incas or the Egyptians. A 'law' which does not fit all the cases cannot be accepted as a law.

There is more to be said for the argument that resources influence the human response through the cumulative effects of economic growth. Suppose two countries to be newly settled by immigrants from the same old country, with the same attitudes and institutions. Suppose that one of the new countries turns out to be much richer in resources than the other. It will then show more rapid economic growth. The question is now: will this more rapid growth so transform the attitudes and institutions of the inhabitants as to add to the rate of growth, or to check it; will the human response in the rich country in due course rise above or fall below that in the poorer country? Some people argue that the response will become more favourable. More rapid growth will stimulate new consumption demands. Technological knowledge will grow more rapidly, and this is a cumulative process, increasing the willingness of the human mind to experiment and to adventure. There will be greater social mobility, and greater flexibility of institutions. Greater opportunity will call forth greater response. Other people argue the opposite case. Greater riches increase the demand for leisure, and reduce the willingness to work. Reduction of economic pressure reduces the need to adventure, and to make the best use of limited resources. Riches stimulate envy, democratic discontents, internal strife and civil war. Society, like men, grows 'fat and lazy'. This has long been the cry of prophets, religious revivalists, fascist dictators, militarists, schoolmasters and

all those other who regard comfort as one of the great destroyers of the human spirit

If one cannot settle this argument by appealing to history, can it be settled by an appeal to anthropology? It is known that some primitive communities have richer natural resources at their disposal than have other primitive communities. Is there evidence that those with the richer resources work harder, or more intelligently than those whose resources are less favourable? Alas, one can get either answer by choosing one's favourite anthropologist just as by choosing one's favourite historian. The truth appears to be that there is no direct correlation positive or negative, between resources and human behaviour. Some peoples with superior resources make more effort than some with inferior resources while some other people with inferior resources make more effort than some others with superior resources. If we set out to explain the vigorous response of a particular people we call to our aid all that we can find in biology, in geography and in psychology, but in the end we are forced to admit that this is really still a *tabula rasa*. The unsolved mysteries of the universe. To this writer the most plausible of all the explanations is the accident of leadership. If a community is fortunate to have a good leader born at a crucial time in its history who catches the imagination of his people and guides them through a formative experience, he will create traditions and legends and standards which weave themselves into the thinking of his people, and govern their behaviour through many centuries. This is to some extent a biological accident. The alternative view, that men are made by the circumstances in which they find themselves and that leaders are mere creatures of their times is quite untenable. To hold it is like believing that in every country in every year there is born a potential Beethoven, a potential Buddha, and a potential Newton. The distribution of men with the highest creative power seems to be a rare statistical accident, in place as well as in time. The circumstances of place and time help to determine whether these qualities will be recognized and used, but they cannot create what is not already there, and the community is most fortunate if the leadership it needs is there when it needs it.

CHAPTER III

ECONOMIC INSTITUTIONS

IN the preceding chapter we considered the willingness of people to make the effort required for economic growth; in this chapter we consider the scope which the community's institutions offer to such effort. The two are not unrelated; if the institutions are favourable, willingness to make effort is encouraged and grows; and if this willingness is strong, institutions will be remodelled to accommodate it. We separate the two only for convenience of analysis.

Institutions promote or restrict growth according to the protection they accord to effort, according to the opportunities they provide for specialization, and according to the freedom of manoeuvre they permit. We shall consider each of these matters in turn. Then, after a more detailed analysis of certain institutions, we shall turn from the consistency of institutions with growth to consider the evolution of institutions, and the processes of change.

1. THE RIGHT TO REWARD

Men will not make effort unless the fruit of that effort is assured to themselves or to those whose claims they recognize: this is the fundamental argument of this section. Much of the effort of social reformers is directed towards changing institutions so that they accord protection to effort. Nevertheless, the proposition is by no means simple; one may argue both about 'those whose claims they recognize', and also about the assignment of 'fruit' to 'effort'.

(a) *Non-Material Rewards*

Utopian philosophers have often challenged the idea that material reward needs to be in some sense proportional to effort if effort is to be stimulated. Some have suggested that man is, or can become, a creature who will work for the pleasure of creative effort alone, or for the pleasure of serving his fellows; while others, less boldly, have suggested that he is or can become content with social recognitions not involving material reward.

Now it is certainly not to be denied that men derive from work satisfactions other than the material reward. Some kinds of work, which permit creative self-expression, are done for little and sometimes even for no reward. But most work is not of this type. Not only is it true that most occupations are not of this type, but even in the

attractive occupations most of the work to be done is mere drudgery. After the surgeon has taken out his twenty-fifth appendix, the operation becomes a bore; and even the university teacher tires of repeating himself. If the community relied on people doing only what they found it attractive to do, most of its work would not be done.

Again, it is true that the sense of serving one's fellows adds pleasure to work. Most people are glad to work for little or no material reward on some occasion or other—for one's church, or one's village, or in face of sudden disaster. But it is also true that, in our relations with the other members of our group, we have also other inclinations besides the inclination to serve, which may conflict with it. Some have a highly developed propensity to shirk; and others have a strong sense of justice which makes them resent being expected to do more than their fair share. In a group where all the members have highly developed propensities to serve each other, men will work without comparing closely their shares in the group effort and in the group reward. But very few groups, other than the small family group itself, can rely exclusively or primarily on these ideals.

Where the utopians are right is in insisting that men are more likely to work without differential reward if their work benefits all alike than if someone else in particular is obviously reaping a fortune therefrom. In a community where everybody gets more or less the same remuneration people are not angered by the fact that other people are benefiting from their work. But they have also no incentive to make special effort, or even to avoid shirking their share of the work to be done. It is important to ensure that one man does not make a fortune out of some other man's work; but this is not enough. For unless we match differential effort with differential reward, men are unlikely to take the trouble to develop their talents and resources to the utmost of their capabilities.

To say that men put forth more effort if the fruit is to be enjoyed by themselves and by their intimate circle than if it has to be shared with a wider group is not to deny that it is desirable that men should also be able to find creative pleasure in their work, or that men take pleasure in serving their fellows, or that recognition by the conferment of distinctions adds sweetness to labour. Men will work all the more if their work is creative, if it serves social ends that they value, and if it is recognized; but they will also work the less if the material reward is withheld. Nowhere is this now better recognized⁴ than in Soviet Russia. When that state was created, its leaders believed that effort would not be reduced if earnings were equalized, and if orders and decorations were substituted for differences in pay. Experience belied their expectation, and when rapid economic growth became a major object of policy, the Soviet rulers returned to reliance upon

wide differences in earnings, and made it an offence to suggest that men should be paid equally, irrespective of the work they do

The power of communalism is seen ideally in a modern dress in the progress in recent years of the movement for 'community development' in rural areas. In these schemes villagers are encouraged to give their labour freely for works of special benefit to the village, such as building roads, or schools, or wells, or community centres, or other public property. It takes some organization to get these schemes working, there must be government officials to plan them, and to work up enthusiasm for them, and public funds must also be provided to meet the cost of materials or of skills which the village cannot itself provide. Given such organization experience shows that villagers will gladly turn out to work freely on local public works. The idea that they will do this seems strange to townsmen especially in our individualistic societies, but, in a small village where everybody knows everybody else, a sense of communal effort for communal purposes may be a very effective incentive to the betterment of social conditions. All the same there are definite limits to what can be achieved in this way. In the first place the works must be of local benefit: the villagers will build a minor road connecting their village to a main road but they will not build a main road for all and sundry without payment, or they may dig drainage works for their village freely but will not do so if the benefit is to be diffused widely outside their area. Secondly the works must benefit the village as a whole, and must not be obviously of much greater advantage to some than to the rest.

These limitations of 'community development' illustrate very well the limitations of group loyalties as incentives. These loyalties function very well in stable economic situations where routine action is all that is required and not individual initiative; in such situations each individual grows up knowing what he is expected to give, and what he can expect to get, and the economic system may function merrily. The system may even adapt itself to change, if the change is of the kind that benefits nearly everybody to the same extent. Usually, however, economic growth does not benefit everybody to the same extent, some benefit more than others, and it is difficult to get people to do something more than or different from what they have been doing in the past if the benefit is to accrue mainly to others. Economic growth requires something more than that people should be willing to carry out established routines cheerfully, without counting effort and reward. Growth involves changes in the kinds and quantities of work done by different individuals, and even if innovation is introduced by order from above, growth involves also some willingness on the part of individual members of the clan to

adjust spontaneously to changing opportunities, and to seek and exploit new chances. Of course, some societies appear to have reached the limits of what they can achieve in the hard geographical conditions in which they live, and with the technology at their command. It is possible, for example, that the Eskimos are doing as well as they can; that greater individualism would not discover improved techniques of living; and that a loosening of ties of obedience and of obligation might on the contrary reduce the chance of survival. If growth is not possible, the absence of individual initiative is no handicap. Most communities, however, are capable of economic growth, if not by improving their techniques from within, then at least by absorbing new techniques from abroad, or by responding to new opportunities created by foreign trade. Then, once we move out of stable into changing conditions, it is doubtful whether a sense of one's communal obligations is adequate to bring forth the necessary adaptations, in the absence of a close relationship between individual effort and reward. It is equally doubtful whether this sense of obligations can survive opportunities for individual profit. Individualism seems to make great strides in all societies which are subjected to accelerated economic change, and this seems to be inevitable.

(b) *The Management of Property*

Capital formation is one of the conditions of economic growth, and the existence of a law of property is one of the conditions of capital formation. By property we mean the legal right to exclude other people from using a particular resource. This right may vest in a private person, or in a group, or in a public authority; the numbers enjoying the right may be large or small; but whoever may exercise the right, this right of exclusion is fundamental. This is emphasized because the term property is so often used to mean only private property. A battleship owned by the government is as much property as the farmer's acre; it is property because, despite the fact that the battleship in some theoretical sense belongs to 'all the people', in law and in practice individual members of the public are excluded from having anything to do with battleships except under strict authorization.

The legal concept of property is enshrined in all economies, capitalist, socialist, feudal or otherwise. For if a resource and its fruit could not be protected against the public at large, it would certainly be misused, and hardly any person would find it worth while to invest in its improvement. The legal protection of property is therefore extended to all resources as soon as they become scarce. Thus, in countries which are sparsely populated relatively to their resources, some resources may remain free for many centuries. Individuals may be allowed to cut forest trees at will; to fish freely in rivers; to take

water as they please; or to pasture their cattle as they please on common lands. But, as population grows, all these activities come under control; the resources in question become private property, or if they are recognized as public property, their use is carefully regulated by the state or other governing authority.

If it is necessary to protect public property from private abuse, it is just as necessary to protect private property from public abuse. The maintenance of law and order is one of the primary conditions of economic growth, and many communities have declined because the state was unwilling or too weak to protect the owners of property against the actions of bandits or of mobs. The instinct to invest can, indeed, survive considerable civil disturbance, and even revolution; but if the period of disturbance is long drawn out, dissaving takes the place of capital formation. Governments, too, can be as damaging to confidence as bandits or rioters. Investors may put up with a high level of taxation, if the nature and incidence of taxation are known in advance, but arbitrary taxation—such as when a ruler seizes a country house because he happens to like it, or when individuals are arbitrarily picked out and forced to pay—encourages men to conceal their wealth (usually in unproductive forms), to export it, or to consume it. (Taxation is discussed further in Chapter VII.)

Property is a recognized institution in every part of the world; without it the human race would have made no progress whatsoever, since there would have been no incentive to improve the environment in which one lived. There is, however, more to this institution than the fundamental right of exclusion, and societies differ widely in the complication of their laws and customs relating to property.

The fundamental requirement, from the angle of economic growth, is that a potential investor must believe that he is in a position to 'get his money back', plus some compensation for the act of making the investment instead of consuming his substance. This requirement applies whether the investor is a private person or a public authority, since even governments do not make investments unless they expect to get full value for their money. The investor may be wrong in his belief; the risks may be greater than he has estimated, and he may not in fact get his money back; but at the time of making the investment he must believe in his prospects. On the other hand 'getting one's money back' requires fuller elaboration. One may invest in a resource whose product is not to be sold, but is to be enjoyed with the passage of time—for example in the case of private persons, a house or other durable consumer good, in the case of governments, a school, a road or a block of government offices; or a private person may make loans out of sentiment, or a government out of political considerations, knowing that the money will not be repaid. These come within

'getting one's money back' in the sense that the investor is satisfied that the benefits he gets, whether material or sentimental or political, are worth the cost. Using the phrase in this wide sense, we may say that it is a condition of investment that the investor should believe that he is in a position to get his money back plus some compensation for investing it instead of using it immediately for consumption purposes.

Now if the investor is investing in his own concern, without partners or employees, the problem is relatively simple. But if he has partners, or is hiring out his property or employs people to manage it, or other people to work on it complicated problems arise out of these relationships. For the joint product of his property and of other people's property has then to be shared out, and if the interests of those who share conflict as will almost inevitably be the case, very strict rules have to be obeyed if all parties are to be satisfied.

Take first the relation of partnership. If joint property is shared equally between partners each partner has an interest in putting in no more than his fellows put in in trying to put in less and in trying to take out more whether what is put in be money or effort or thought. Family businesses also illustrate the point where the members of the family are numerous or mutually antagonistic the business often founders upon the fact that some members are more anxious to get what they can out of the joint property than they are to maintain it. Another example is provided by some of the early attempts of farmers to own farm machinery co-operatively; it was found that some farmers did not use the machinery as carefully as they would have done if it had been their own, and it became necessary to employ trained mechanics exclusively responsible for operation and maintenance instead of allowing each farmer to operate the machines himself. The modern corporation also has its problems in the divergence of interests between different classes of shareholders. Or it may be the contingent interest of creditors which stands between the person who controls the property and his benefit, for if there is a fair prospect that the property may pass into the creditors' hands, the owners may be reluctant to improve it, and may deliberately encompass its decline. Economic growth requires that the person who is in a position to decide that the property be maintained or improved should have an interest in making the right decision.

Equally difficult problems arise if the person using property is not its owner. Thus the relationship between landlord and tenant has to be carefully regulated if the tenant is to have an interest in maintaining the fertility of the land and in making permanent improvements--we discuss this case in greater detail in a later section of this chapter.

Similar problems arise in all contracts of hiring.

Again, salaried managers or agents are notoriously unsatisfactory. It is not merely that they are tempted to keep for themselves some proceeds which legally belong to the owner; this may indeed reduce growth by reducing the reward for capital formation, but it may also merely involve a change in the distribution of income. More important, perhaps, from the angle of economic growth, is the fact that the agents may neglect the property, if their income does not vary directly with the care they take; or on the other hand may prolong its life improperly, in order to prolong their own employment, by re-investing in the property part of the owner's profits which could more profitably be invested elsewhere. These problems are specially acute in absentee ownership; but they are found even where the owner lives on the spot, if he does not bother to give serious attention to his property; and, of course, some agents are much better at managing the property than the owner could ever be, because of their greater knowledge or their natural flair for this kind of work. In any case, absentee ownership is now the rule rather than the exception in modern industrial communities. Most of our property belongs either to shareholders, who have entrusted its management to directors; or to the state or other public authorities, who also depend upon employees for its management. In both cases there are stringent and not altogether successful laws which seek to protect the owners' interest against the interest of those whom they employ. Some part of the case for private property, as against public property, used to rest on the argument that the private owner of property was likely to look after it better than the salaried employee of the state, but much of this argument has ceased to hold since the growth of large scale organization and of the joint stock company has caused the management of private property to pass largely from owners to salaried employees.

Finally, some of the most difficult problems of our society arise out of conflict between those who own property on the one hand, and those who are employed for wages to work with other people's property on the other hand. This conflict can be dramatized by stating it in terms of its extremist proponents on either side. On the one hand there are always some advocates of slavery, who hold that the worker should receive only the cost of his subsistence, and that all the surplus produce beyond this level belongs to the owners of property. On the other hand there are those who assert that only work creates produce, so that the worker is entitled to the 'whole produce of his labour'—whether this allows some deduction for depreciation of capital not even always being made clear. In between these extremes fit many different proposals for the division of the product.

This problem is different in kind from those we have so far considered in this section. Hitherto our concern has been that those who control property, whether as owners, as tenants, or as managers, should have an interest in maintaining and improving it. The share of the workers in the produce does not, however, necessarily raise problems of control, so we will consider it separately.

(c) *The Reward for Work*

We have said that men will not do their best work unless the fruit of their work is assured to themselves or to those whose claims they recognize. Problems arise so soon as it becomes difficult to distinguish the fruit of their work from other fruit, as is the case if they are working together on a joint enterprise, or if they are working with property which belongs to someone else.

Working together becomes necessary so soon as there are economies of scale. Since it has problems different from those which are due to the separation of work and ownership, we can best get it into perspective by considering the case where men work together with their own property, that is the case of co-operative enterprise. The word 'co-operative' is used by many different kinds of organizations, but we are concerned in this context only with co-operatives in the literal sense, that is to say with organizations where the workers own the property, manage it themselves, and distribute the proceeds among themselves. (In other co-operatives the workers are employed for wages by consumers, or by farmers' marketing societies, or the like.) The need to work together arises as soon as the advantages of scale begin to be evident—either because of specialization, or because of the need to join together to work some piece of indivisible equipment.

Co-operative units have two major problems, namely incentives and authority. As for incentives, each partner has to rely on the good faith of the others, in a situation where any one partner can slacken off without correspondingly diminishing his share of the product. The system can work quite well if the partners are not numerous; especially if they are related to each other, or linked by mutual sympathy. Six or a dozen craftsmen or farmers can work together for decades without the partnership foundering on any major dispute. They do not always succeed; even family enterprises do not escape slackness, lack of incentive or dispute. However, once the partnership begins to involve larger numbers, it cannot be based exclusively on mutual trust and sympathy. It becomes necessary to pay each member according to what he does in terms of hours and of skill. The surplus profit can still be divided on some 'co-operative' principle—according to earnings, or equally, or according to capital contributed—but the emphasis has to be placed mainly on creating

a system of wage incentives—piece rates, bonuses and all the rest—which penalizes the partner who shirks and rewards the partner who gives superior effort.

This is not, however, the only problem presented by size: much more difficult is the problem of managing large co-operatives. A large body of people cannot work together efficiently without discipline and authority. Someone has to take decisions, and to enforce them. The members of a co-operative may be equal partners, but they cannot have equal authority. If they are numerous, they must delegate most of their authority to a committee, and no executive committee is effective which is not content in its turn to delegate most of its authority, and to put responsibility squarely on the shoulders of a small number of individuals. This means, however, that the great majority of the co-operators are removed from decision making, and have to carry out orders just like any paid employee. They become dissatisfied with this. They probably also become dissatisfied with the division of the proceeds; with their own pay relatively to others; or with the management's desire to put a large part of the surplus to reserve, for contingencies, or for expansion. Sooner or later they overthrow authority, and the organization is rent by internal dissension. Consequently it is virtually impossible for large scale organizations run as co-operatives to compete successfully against other large firms run without the co-operative principle. The exceptions prove the rule. The collective farms in the U.S.S.R. are co-operative only in name; the management is provided by members of the Communist party, who tell each member what he is to do, pay him according to what he does, and share out the surplus in proportion to earnings. The individual member has only theoretical power to change the management and alter its policy. In Israel the communal farms are genuinely democratic, they are, indeed, mostly indebted to and supervised by a central agency, but this does not seem to restrict their genuine powers of self-government. Membership averages around 250, and members are not even paid according to the work they do. Most observers seem to agree that the success of these collectives has depended so far upon the special emotions associated with immigrant Jewish agriculture in Israel, and upon the part played by collective organization in the military defence of isolated settlements. Sooner or later the special strains and emotions involved in creating a Jewish National Home will wear off, and if the collectives then retain their primitive communism, and succeed economically, they will be doing so contrary to all previous human experience.

Some form of co-operative is the primitive working unit of human beings. In the earliest societies we know, the working unit is the family, or the clan, or the guild of craftsmen, the priests, or other

grouping. Western industrial capitalism began in partnership units, with craftsmen working together; the employment of journeymen by master craftsmen seems to have arisen only in the later Middle Ages. Group work has its advantages, especially for people living on the margin of subsistence, or living in fear of attack or of recurrent natural disaster; for then each helps the other, and there may be mutual protection or insurance in working together. It is quite common for peasants to form working parties to work on each other's land, helping each other to build houses, or to clear the land, or to harvest. But this form of organization depends for its continuance on strong ties of group loyalty, resting in kinship, or in religious association. It breaks down as soon as more individualistic notions begin to spread, as soon as there are growing opportunities for trade or for innovation of which individuals become increasingly aware, and as soon as large scale organization begins to offer economies. The co-operative form of enterprise is excellent for stable societies, but it does not survive easily as a productive unit (as distinct from marketing or credit) once the lower levels of subsistence have been passed.

Problems of incentive and of authority are common to all large scale organizations, even when the workers own the property with which they work. The separation of ownership from work, however, introduces a third problem, namely that of the division of the proceeds between work and property. In co-operative organizations property has no separate share: the whole of the proceeds is divided amongst those who work with it and own it. But in capitalist and socialist societies property belongs either to the capitalist or to the state, and in either case the owner demands both some remuneration and also participation in controlling the operations. It should, in particular, be noted that the nationalization of property does not solve any of these problems. There was a stage in the development of socialist theory when socialists were proposing that property should belong to those who worked with it—in forms of syndicalism, or Guild socialism, or workers' control—in which case socialism would simply be co-operative enterprise, and would face only two problems instead of three. But in the event, whether in the U.S.S.R., or in Britain, or in the U.S.A. or elsewhere, socialism has taken the form of transferring property from private owners not to the workers but to the state or other public authority, which retains control and a share of the proceeds. How much difference this makes in the mind of the worker depends on his attitude to the state. He may well believe that it is more equitable to share with and be managed by the state than with or by a private owner; this depends very much on what he has been taught to believe. Some workers have grown up in fear of

their governments and in friendship with their employers, and would resist any such transition; whereas others have been taught to hate 'the employing class', and to respect 'the democratic state'. But in any case, even if the worker prefers the state boss to the private boss, and the state profiteer to the private profiteer, he is unlikely to prefer either to neither. That is to say, even in the best regulated form of state enterprise he is conscious of the fact that he does not get the whole produce of his labour (whatever this may mean), and of the fact that 'wage slaves' have to be at the beck and call of their supervisors. The problems of state-run enterprises have thus proved to be not essentially different from those of private enterprises, and if this is not as immediately obvious in the U.S.S.R. as it is in Britain or elsewhere, this is mainly because workers' attitudes are not easily expressed in non-democratic societies.

The right of property to a share in the proceeds has always excited men's minds. One school argues that wealth is created by work, and belongs only to those who work, from this stemmed a labour theory of value. Others have defended property's share on numerous grounds—on the natural right of men to own property, on the need to provide an incentive to improve property, on the Malthusian doctrine that the poor would waste the proceeds of property on having more children, while the rich would reinvest them; on the psychological cost of saving, on the right of each factor to earn its marginal productivity; and on numerous other defences. The state is no less ingenious than the private owner or his economic philosophers. If twenty per cent of the national income is needed for gross capital formation, and another twenty per cent for the current uses of government, even the most socialistic state has no difficulty in proving that the workers cannot expect to get the full produce of their labour; or to put it more prettily, that they must be satisfied with sixty per cent directly, and be pleased at having forty per cent spent on them indirectly in ways in which they could not or would not spend it themselves.

It is possible that these problems cannot be solved in large scale organizations. Piece rate and bonus systems of wage payment may succeed in stimulating effort, and profit-sharing arrangements may restore a little the atmosphere of co-operative enterprise, but the claimants to the produce are too many for the partners to trust each other implicitly without continually comparing input with reward. The workers will compare their own rewards, or their rewards with those of their supervisors and superior staff, or output in general with the share taken, if not by private capitalists, then by the state. The partners may quarrel more bitterly in some places or at some times than in other places or times; they cannot ever completely agree that

justice is being done to all since no one can say what justice is in terms which everyone else will always accept. So also the problem of authority is as insoluble as that of incentives; the psychological malaise of working in big institutions is incurable. The human mind revolts against discipline, and no big organization can be run successfully without discipline, obedience and loyalty. The workers may be given power to elect delegates to managerial committees, but if the organization is large, the delegates cannot be numerous, relatively to their constituents; and in any case once they become entrenched in managerial responsibilities, the delegates inevitably tend to side with the management, because they realize that a large organization cannot be run successfully from below. A sense of antagonism between management and worker is as inevitable in a large organization as is a sense of antagonism between clergy and laity, between government and subject, between father and family, or between general and private. It derives from the desire of each of us to have his own way, working in a situation where we have inevitably to accept countless decisions which we have no part in making, except remotely, and which are not tailored to each individual case. The situation provides a continuous challenge to managements—to win loyalty by the consideration which they show to those over whom they have authority (not less than by their efficiency), and to approximate their undertakings to the give and take and mutual respect which distinguish the happy family rather than to the reliance on hierarchy and sanctions which characterizes military groups. But conflict and frustration are inevitable accompaniments of large-scale organization.

Perhaps too much is made of the worker's desire for self-government, both by those who believe that democracy inside the factory is possible and also by those who fear that its impossibility must lead to the breakdown of the industrial system. Not all workers desire self-government in industry; probably a majority prefer to be given a job with limited terms of reference, and to be set free from responsibility for the affairs of the undertaking at large. In all human societies, whether factories or counties, trade unions, churches or states, it is observable that only a very small minority of people offer themselves as candidates for office, or take any continuous interest in the affairs of their organization. They may be very pleased to belong to the organization, and they may turn up to vote at elections—though the percentage voting is sometimes remarkably small—but it is exceedingly difficult to get members to keep themselves informed as to what is going on, let alone to participate actively in discussion or management. This being so, one might think that the desire of a minority for active participation could be met in industry by such persons drifting into the small firms, where

such participation is feasible, and leaving to the large establishments the people who prefer to have things run for them. But it does not work out in this way. The large establishments on the contrary frequently attract those workers who have an itch to organize and supervise, and these set about stimulating the rest to defend themselves and to participate (as they see it), or set about stirring up trouble (as the managements sometimes see it).

The role played by this active minority in indoctrinating and organizing other workers for wages also emphasizes the part played in human affairs by fashions in opinion. Although the success or failure of systems depends partly upon their intrinsic nature, it depends also partly upon what men choose to believe about them. The great industrial unrest through which the twentieth century is passing owes as much to propaganda as it does to anything else. The industrial worker in the U.S.S.R. has less freedom than his counterpart in the U.S.A., and receives a smaller share of what he produces, but it is conceivable that propaganda in favour of his situation may cause him to accept it much more than the U.S. worker, who is subjected to strong propaganda against a similar status, even though it is relatively superior. It is this which makes prediction impossible. An economist living in Rome at the time of Spartacus might have predicted confidently that slavery was so intolerable to the masses that it must soon fail; instead it was established more firmly than before. Similarly, one might now be tempted to predict that large scale organization, whether in co-operative, in private, or in state ownership, is proving so irksome to the workers that it must fail; and that there will soon come a time when only small establishments, based on personal relationships, will stay sufficiently free of strikes and of ca' canny to be successful in the market. But this prediction may be just as wrong, especially if the state increasingly takes over management, and lines up with the church and with trade union leaders to persuade the workers that this is a fundamental change which gives them the best of all possible worlds. To return to the point from which we started this section, 'men will not make effort unless the fruit of that effort is assured to themselves or to those whose claims they recognize', but what they consider to be their proper share of the fruit, and whose claims they recognize are largely subjective matters, which depend upon what they have been brought up to believe.

2. TRADE AND SPECIALIZATION

We turn next to consider the opportunities which institutions give for trade and specialization, since the extension of trade and of specialization are a vital part of economic growth.

(a) Advantages

Trade stimulates growth in many ways, of which its stimulus to specialization is only one. Trade stimulates demand, by introducing new goods to a community, and in doing so it may stimulate the desire to work more, or more effectively. Since limited wants, due to limited horizons, keep effort low in many primitive communities, the opening of trade may effect a revolutionary attitude towards the value of work. Trade also reduces the community's need for working capital. In the absence of trade each household must keep stocks of all it needs; when trade permits the stocks to be held by merchants in central reserves, the ratio of stocks to consumption is greatly reduced. Indeed these stocks may often mean the difference between life and death in countries which live on the margin of subsistence, since trade permits commodities to be moved from surplus to deficit areas in times of famine. Trade also brings new ideas—new patterns of consumption, new techniques, or new ideas of social relationships. Tales from foreign lands challenge established traditions, and allow individual members of the community to experiment in ways which would otherwise be prohibited. If in studying the history of any country we find that it is suddenly showing more rapid growth, or changes in beliefs, or changes in social relations, the explanation is almost always that there has been an increase in opportunities for trade.

Trade also stimulates specialization, since the division of labour depends upon the extent of the market. Adam Smith said of specialization that it owes its superior productivity 'first, to the increase of dexterity of every particular workman; secondly, to the saving of the time which is commonly lost in passing from one species of work to another; and lastly to the invention of a great number of machines which facilitate and abridge labour, and enable one man to do the work of many'. Smith attached so much importance to the division of labour that he made it seem even to be the cause of the growth of technology and of the application of capital. Later writers challenged this causation, and some even argued the other way—that specialization is not the cause but the result. In our day we are content to say that specialization, knowledge and capital grow together.

Increasing specialization seems to be as much a principle of economic as of biological evolution, and its association with economic growth is beyond all question. It has, nevertheless, its costs. Any specialist is likely to suffer if the demand for the service in which he specializes diminishes. Demands are altering all the time, because taste changes, or because new techniques or new goods render the old skill obsolete. If the specialist cannot turn his hand to something else, he may suffer a severe loss of income. This applies

also to a community as a whole: the greater the specialization, the greater the need for occupational mobility, which is the best insurance against changes in demand. The community may also suffer from specialization if trade breaks down, and if it is therefore unable to get essential supplies, as when a war interrupts trade, or when the usual sources of supply are cut off by earthquake or other disaster. Provision can be made for temporary interruptions of supply by carrying emergency stocks, like the stockpiles now being created by the U.S. government in case of war. But it may also be advisable to take the precaution of not specializing excessively—how far to go being a matter for subjective assessment of the risks.

Another cost of over-specialization is lack of balance. This can be seen clearly in agricultural operations. Excessive specialization on one crop may cause biological unbalance, showing itself in soil exhaustion, or in the spread of pests and diseases. It is open to the individual farmer to prevent soil exhaustion by having a suitable rotation of crops, and by mixed farming. But the individual cannot prevent the adoption of monoculture by the farmers in his region, and the dangers of pest and disease to which this gives rise. If monoculture is to be prevented, in a region where it is considered undesirable but is temporarily very profitable, there must be a group decision to prevent it, by prohibitions on planting, or by subsidization of other crops.

Specialization also causes lack of balance in the human mind. A people which specializes in mining does not see the world in the same way as a people which specializes in farming. Similarly, within the group people with different specialisms see things differently and may clash irreconcilably in outlook as well as in material interests. These differences of outlook and of interest are often deplored; Speech Day orators denounce narrow specialization and urge that education should be broadly based. Nevertheless, this diversity may be thought to add something to the quality of human community life, which is missing in a community where everybody has the same occupation and experience. It poses greater problems of co-operation, but it also presents greater opportunities of intellectual progress, since it is in the clash of experiences that human ideas are refined.

In the same way, the clash of material interests at least causes society to change continuously. This is so whether we accept the view of those materialists who see all history as a succession of class struggles, or whether we reflect merely how little change there would be in society if each person were satisfied with his share of the national income. Some people regret that there is ceaseless change, and say that they would be glad to get back to a world in which each person grew his own food and spun his own cloth—if there

ever was such a world. We are not here concerned with the desirability of change or stability (we treat this matter in the Appendix); we note here merely that there is ceaseless change, and that specialization contributes towards it.

(b) *The Extent of the Market*

The greater the market the greater the possibilities of specialization. The size of the market depends upon the degree of household self-sufficiency, upon the size of the population, upon the cheapness of communications, upon the wealth of the community, upon the standardization of tastes, and upon the man-made barriers to trade.

The primitive household is almost completely self-sufficient. Every village has some specialist craftsmen, but they supply only a fraction of the villager's wants. The self-sufficiency of the village as a whole is associated mainly with its isolation, but the self-sufficiency of the individual household is associated mainly with the status of women. As economic development occurs, many of the jobs originally done by women in the household are transferred to external agencies, which do them more efficiently both because they are more specialized and also because they use more capital—fetching water, grinding grain, spinning, weaving and making clothes, teaching children, looking after the sick, and so on. This transfer of jobs is paralleled by a transfer of female labour out of the household to work in external establishments. In most primitive societies men object to their women working for wages. As the taboos break down, greater specialization becomes possible, and there is a substantial increase in national output—as well as a substantial increase in women's freedom.

The size of the market depends also upon the size of the population. There are substantial economies of scale in some kinds of production, especially in manufacturing, in public utilities, and in some kinds of service (education, public health, mass entertainment). Quite a few countries are under-populated, in the sense that if their populations were larger such products or services could be offered more cheaply on a mass produced basis, instead of being produced in smaller, less specialized establishments. The size of the population, however, is a concept which relates to space as well as to number, and which is therefore essentially a matter of communications. If transport costs were zero, even the smallest country could enjoy all the benefits of specialization, since the whole world would constitute a single market; even the smallest country could then specialize, and sell its surplus to others, in return for what it wished to consume. We discuss population questions more fully in Chapter VI.

The cost and extent of communications depends partly upon natural features, and partly upon the enterprise of transport under-

takings. Some governments are more alive to their responsibilities in this sphere than other governments. Indeed, in the history of most countries the good rulers are often marked out by the vigour with which they extend the system of roads, and the bad rulers by the poor state of the roads in their time. A cheap and extensive network of communications is the greatest blessing which any country can have, from the economic point of view. Before the invention of the railway, water transport was the only relatively cheap form of transport, and those countries which were easily accessible by sea or by river showed the greatest expansion of trade and of wealth. If we ask why some countries have played a more vigorous part in human history than other countries, greater accessibility by water is usually one of the answers.

That the size of the market for any commodity depends upon the wealth of those who buy it is obvious. Equally important is the degree of standardization of the demand. One reason which is sometimes adduced for the superior productivity of labour in the United States is the willingness of people to buy mass produced and standardized articles. This is partly a matter of the extent of social snobbery in the community; if snobbery demands that the individual show his superior status by buying commodities of individual design, or hand made commodities, or articles fashioned specially to his requirements, then the market for each type will be small. It may also be a matter of class structure; countries which have a well developed middle class may offer a better market for mass produced commodities than countries of equal wealth which have only rich and poor. Class considerations apart, the taste for artistic work of individual design may have been created merely by the excellence of a country's craftsmen, who, for decades or centuries before mass production became feasible, had specialized in producing work renowned for its high merit. Such may have been the position, for example, in France and in India. Then when mass production becomes possible the country may lag behind others which have not had these special skills, and in which therefore a mass demand proves easier to create. Much depends also upon the imagination and enterprise of business leaders. Nobody knew how large the demand for mass produced commodities could be until men like Ford and Woolworth showed the way.

Then there are the man-made barriers to trade—the tolls, the tariffs, the quotas and the prohibitions. The reduction of these barriers was one of the greatest achievements of the human race between the sixteenth and the nineteenth centuries A.D. The work began at home, with the removal of the internal barriers within political frontiers, and was associated with the creation of strong central governments in countries where previously local princes had

great power. The Mercantilist age is famous for its literature defending restrictions on foreign trade, but the most important work of the Mercantilist philosophers was their insistence on the advantages of internal unification, and the efforts that were made in their age to level the barriers to internal trade. Their work has never been undone; nobody today argues that subordinate political authorities—provincial governments, county councils or municipalities—ought to have the right to levy tariffs. The Mercantilist age passed imperceptibly into the age of free trade, which the nineteenth century was, *par excellence*. During that century barriers to international trade were reduced in almost every country of the world, and though the tide turned before the century's end, the level of trade restrictions was insignificant in 1900 compared with what it had been a century earlier. Nowadays opinions on international trade are again as sophisticated as they were in the Mercantilist age, we shall return to the subject in Chapter VI.

(c) *Organization*

As soon as men begin to specialize it is necessary to have some mechanism for co-ordinating their activities. On the smallest scale this can be done by administrative fiat. Inside a firm, or a government department, or an army unit, each specialist is told individually what to do, and it is the job of the management to have a mental picture of how the work of all the individuals fits together. This cannot, however, be done for a whole community since the ends to be served and the means of serving them are too numerous for central co-ordination to work efficiently. Instead, the activities of individuals are co-ordinated by the market. Supply and demand determine prices, and each individual is able to suit his own purposes by responding to price incentives, while at the same time serving the wider ends of all individuals taken together. The price mechanism does not, indeed, resolve all social conflicts, it is an imperfect mechanism, like all other social institutions, and its operation is also affected by the efforts people make to prevent it from working freely. It is everywhere regulated, by private monopolists or by governments, but nowhere can it be dispensed with altogether, so long as there is specialization and trade. Even the government of the U.S.S.R., which regulates economic activity more than other governments, depends quite significantly on the price system to co-ordinate economic activities—to stimulate the supply of types of skill which are scarce, to stimulate agricultural output, to discourage consumption of scarce commodities, to enforce efficiency upon state-owned industries, and more or less for all the other purposes which prices serve also in less 'planned' economies.

Now, if the price mechanism is to serve as a regulator, people must be responsive to prices. They must be interested in prices, whether of the labour they can do, or of things they can make, or of commodities they may buy, or as the case may be; and they must be willing to respond to prices by altering their behaviour to take advantage of favourable changes in prices. A civilization in which people are responsive to prices may be referred to, contemptuously, as a 'pecuniary', or an 'acquisitive' civilization; our concern, however, is not with morality or contempt, but with the conditions of economic growth. Growth requires specialization, specialization requires co-ordination by a price mechanism, and this co-ordination is effective only in proportion to the response of individuals to changes in prices. Now the degree of this response is largely a matter of habit. When people who have hitherto produced only for their own subsistence are first introduced to a price economy, their response is both limited and unskilled. They neglect opportunities; they do not know how to choose; they are easily defrauded; they do not sense the difference between temporary and permanent price changes; they do not know about seasonal and cyclical variations, or about quantity discounts; and so on. One has to learn how to respond to market prices just as one learns any other part of one's culture. The performance improves as generations grow up who have always known and used the market, and who are experienced in its tricks.

Specialization requires also the use of money; barter is compatible only with the most rudimentary forms of specialization and of trade. The invention of money is one of the greater achievements of the human race, like the invention of the alphabet, or the discovery of how to make fire at will. Without money trade would be reduced to a trickle. Without money each household would have to store up all its possessions, instead of being able to buy from centralized reserves (shops) as required. And without money there could be very little lending and investment.

Despite its value, the invention of money has spread so slowly that there are large areas of the world where it is only just coming into general use. For example, in some of the great nations of Asia, where money has been used in one form or another throughout their recorded history, it is still the case that as much as forty per cent of their national output, on the standard definition, is not exchanged against money. The use of money is associated with specialization and trade; where people are so poor that they have little surplus to trade, they have little use for money.

The use of money alters social institutions by increasing the importance of the market; even more important, perhaps, it also

alters human attitudes. Once money begins to circulate in a community, and production for markets becomes common, economic relations move increasingly on to an impersonal basis. Status and kinship count for less, as money counts for more. Wealth is easier to accumulate in cash than in cows or in sacks of corn; the 'acquisitive' instincts—the desire for wealth—are therefore easier to exercise, and grow as they are exercised. The 'capitalist' relations of money-lending and of wage employment also spread more easily with money than without it. Hence, forms of organization which are feasible in societies which do not use money, such as the extended family system, or systems based largely on status, cease to work effectively when money comes to be widely used.

We note next that specialization and trade also require that market places should be organized. Lack of markets is one sign of the primitive community. There is almost always some meeting place where food, cloth, and the simpler consumer goods can be bought. But specialization requires a much greater range of markets than this: markets for labour, markets for houses, markets for land, markets for foreign currencies, markets for loans, markets for stocks and shares, and so on. These markets take different forms. It may pay an individual to become, as it were, the market, specializing in bringing prospective buyers and sellers together, just as a house agent's office is a market. Or the market may be merely a column of advertisements in a newspaper. The number and variety of the markets is a sign of the community's wealth. Sometimes wealth can be increased simply by opening a market, so that trade is facilitated, but it is also possible to open markets before the community is in a position to develop enough trade to justify them—as in the case of some of the poorer countries where there is talk of starting a stock exchange.

The relationship between specialization and the size of the economic unit is not simple. Some people believe that specialization increases the size of the firm, because the subdivision of jobs increases the number of jobs and therefore the size of the co-ordinated unit. But this is not necessarily so, since the activities of the specialists can also be co-ordinated by the market. When a new product first appears on the market, the firm introducing it has to make most of the component parts in its own workshop; but, as the demand grows, various firms specialize in making component parts. Thus the motor car is now produced by scores of different firms, each specializing in making chassis, or bodies, or windscreens, or wipers, or tyres, or scores of other accessories; whereas the so-called 'motor manufacturer' may not do much more than assemble parts most of which he has bought from other firms. Specialization increases the size of the firm in so far as it results in operations which have to be done on a large scale; but

it reduces the size of the firm every time that it splits an operation into component processes.

Large scale organization is thus one of the indirect results of specialization. Because people specialize, their activities have to be co-ordinated, and this co-ordination can be done either by market processes or within the firm. In this respect, the market and the firm pull in opposite directions. The more perfect the market, the less necessary it is to have co-ordination within the firm, whereas the less perfect the market, the greater is the opportunity for an entrepreneur to co-ordinate the activities of individual specialists. It is an error to think that the principle of specialization as such gives advantage to large scale organization. The small firm can survive easily if markets are well organized, so that it can buy cheaply such factors as specialist advice, engineering service, component parts, raw materials and the like, and can dispose easily of its product, whether to final or to intermediate buyers. The better organized the market, the less each firm needs to do for itself, and the smaller is the advantage of large scale organization.

The corollary of this is that if it is desired to favour small scale enterprise, the best way to proceed is to organize around the small firm specialist services and marketing agencies so efficient and cheap that the firm is not disadvantaged by being small. The large organization can conduct research, buy in bulk, sell in bulk, raise funds easily, produce a standardized article, advertise, hire the best specialist advice, and so on. The small organization can succeed just as well if it is surrounded by agencies—private, co-operative, or statutory—which will take over all that part of the work which needs to be done on a large scale, so that the small firm can concentrate on those activities which are adequately done on a small scale. Thus the small farm can get its specialist advice from an agricultural extension service, its standardized seeds from seed farms, or its tractors from the tractor hiring agency, and can dispose of its product to an agency which bulks it with that of other farms, and grades, processes, advertises and sells it in bulk. It is not true that the individual firm must be large in scale if there is to be efficiency or economic growth; but it is true that the advantages of specialization cannot be secured unless the economies of scale are available either within the firm or within the framework of well organized markets. All the same, the degree to which the well organized market can substitute for the large firm varies very much from industry to industry. It would be very hard to organize railway service, the manufacture of steel, or the assembly of motor cars efficiently on a small scale, whereas small scale enterprise can hold its own very well in road transport, in shop-keeping, in some forms of agriculture, and in a limited range of

manufacturing activities. Economic growth does demand some expansion of large scale production, however efficiently the market, the co-operative movement or the government may proceed in nurturing the smaller units.

The expansion of large scale organization depends on the availability of entrepreneurial skill, and on the access which this skill has to other factors of production. Entrepreneurship may be undertaken by private persons, or by government officials. In either case the size of undertaking which the entrepreneur can handle is a function of his ability, his experience and the techniques at his command. Taking first the techniques, large scale organization has progressed with the invention of means of communication—writing, telephones, wireless—of means of counting—statistical methods, accounting—and of administrative devices—hierarchies, committees, and so on. All such inventions increase the scale of efficient operation. In most under-developed countries there are very few people who have experience of large scale administration or of its techniques. In such countries small scale organization is more appropriate than large, simply because of this lack of experience, and it is more economical to organize on a small scale operations which more advanced countries would find it more economic to organize on a large scale. As economic development proceeds, the country accumulates administrative experience, and can apply large scale methods more effectively and to a wider range of activities.

Because large scale organization involves great changes in attitudes and in social structures, and brings with it so much discontent, many people dislike it, and would prefer to have only so much economic growth as is possible without increasing the scale of organization. This attitude is feasible enough in a country whose natural resources are limited to cultivable soil, but if the country has considerable resources for mining or for manufacturing it will almost certainly restrict its opportunities unless the growth of large scale enterprise is permitted and encouraged.

3. ECONOMIC FREEDOM

(a) *Individualism and Collective Action*

The growth of income per head in Western Europe and North America in the last few centuries is very rightly associated with the growth of economic freedom—of freedom of the individual to change his social status or his occupation; freedom to hire resources and combine them in ways which increase output or lower costs; and freedom to enter trades in competition with others who are already established in those trades. In this section we shall be examining

the institutional obstacles to these freedoms, but we must first note that individualism is not necessarily the quickest road to economic development. Collective action is also necessary, and in certain circumstances may even have quicker results.

Collective action in the form of government action is necessary even if only to supplement private action. Governments have extensive functions in promoting economic development, to which we refer in more detail in Chapter VII. These range, even in private enterprise economies, from such obvious functions as maintaining roads or promoting research, to more sophisticated functions such as underwriting new enterprises or providing capital to private business. The role of government depends to some extent on the quantity and quality of private entrepreneurship; the less able the individuals to pioneer, the greater the burden that falls upon an enterprising public service.

Apart from government action, however, a strong sentiment of national cohesion may be helpful to economic development whether the pioneering is being done by individuals or by government. If the members of the nation are used to looking to and accepting leadership, the changes which economic growth requires are much easier to achieve than if each is a stubborn individualist. This may show itself in several ways. If the pioneering is in new techniques, the common people will change over more rapidly once innovators have shown that the new techniques are more productive. If it is necessary to arrange for work to be done in large scale establishments, where previously every man was his own master, a new discipline can be quickly established. If sacrifices have to be borne—for instance, if the government decides to launch upon a heavy programme of capital formation—they will be borne with less internal strife or less inflation than in communities whose members are less easily united by a common purpose. If habits and institutions must be changed—the status of women, the legal status of land, the attitude towards migration—the changes are more easily affected. And so on. Some historians contrasting the last hundred years of Chinese and of Japanese history lay great stress on the 'discipline' of Japanese social life, in contrast with the greater individualism of China. It is extremely difficult to give either precise meaning or precise weight to such concepts, but since it is clear that economic change is pioneered by the few and imitated by the many it seems plausible that the rate of change for society as a whole should depend on the willingness of the many to accept the leadership of the enterprising few.

Collective action and cohesive sentiment are not merely necessary to growth, they may also in certain circumstances achieve results superior to those achieved by individualism. A cohesive group,

organized on authoritarian lines is probably *better* able to attain *given* objectives than is a group more individualistically inclined. It is superior, presumably, for anything which has to be done according to a plan, where keeping together is of the essence of success—whether the objective is making war, or controlling the flow of some tremendous river which otherwise threatens destruction, or fighting forest fires, or any other activity where success is dependent on every person taking orders from the chief. The cohesive, authoritarian group will also have superior economic growth, if *the chief knows better than the individuals* the measures which growth requires. The chief can enforce education, or improved technologies, or the use of better seeds, or a higher level of capital formation, or changes in social relationships such as land tenure, or slavery, or monopoly. Hence it is not true to say that growth depends on the individual having freedom to manoeuvre, if the alternative is that the individual will be compelled to do things which lead to growth. The case for the superiority of individual freedom in economic matters rests on the belief that the chief has no superior source of knowledge, and that individuals seeking in many directions are more likely to discover open doors than a chief with a monopoly of manoeuvre. As we shall see in a moment, this belief is true enough in advanced societies, but it is not so obviously true of backward societies, which can grow simply by modelling themselves on the more dynamic features of the more advanced. Hence, given a government which has set itself to promote economic growth, and which has a reasonably competent understanding of the issues involved, a backward society on an authoritarian basis is almost certain to grow more rapidly than a backward society on an individualistic basis. The rub is in the provisos; governments can be intelligent, and they can be authoritarian, and they can have the interests of the common people primarily at heart; but to find these three features in combination seems to be the exception rather than the rule.

These considerations are more relevant to the current controversy about 'planning' than they are to the controversy about the operation of industry by public rather than private enterprise. These two issues are often confused in popular discussion, but they are quite separate. There can be centrally planned private or public economies; and a public enterprise economy can just as well be planned or unplanned. We say first of all a few words about public operation of industry, and then turn to the issue of planning.

The controversy between private and public operation of industries ranges over a great number of issues, most of which do not concern our present purpose. Much of the controversy is concerned with effects upon the distribution of income, in which this book is not

directly interested, the argument being whether state employees would absorb a larger part of the national income than private profit-making entrepreneurs. Another part of the controversy concerns the effects on individual liberty—on the freedom of the worker or of the consumer, or on political freedoms, in a society where property and initiative are concentrated in the hands of the state. Our present concern is only that part of the controversy which relates to effects on economic growth.

This resolves itself into questions of incentives and of access to resources. The entrepreneur, whether private individual or public official, must have the incentive to seek out ways of reducing cost, or of giving the public better service by introducing new or better commodities, or by improving distribution or service. He must also have access to labour, to capital and to materials; that is to say, he must not have too much difficulty in finding a backer who will provide the capital, or in persuading authorities of one kind or another to let him have the labour and materials which he requires.

In so far as it is a question of incentives, the private enterprise system relies, in the first instance, upon the lure of private profit. This incentive, however, operates more in small firms than it does in the large corporation, where entrepreneurship is exercised by directors and salaried managers whose remuneration in these days is not closely linked with profit. Entrepreneurship in large private corporations depends on much the same incentives as entrepreneurship in public corporations; in either case there may be a small bonus varying with profits, but the major incentives are ambition, desire to do one's job well, desire for promotion to a higher salary, and desire for recognition. Hence, as far as incentives are concerned, there is probably not much to choose between private and public enterprise in the sphere of large scale industry. There is much more to choose in small scale activities. The majority of small scale enterprises—the shops, the farms, the restaurants, the small factories, the professional services—are doing a routine job under routine management of men whose abilities are not above the average, and whose ambitions are not sufficiently strong to drive them to ever improved performance. If there were not also material incentives and the fear of bankruptcy. If private enterprise were entirely prohibited it is possible that the large enterprises could continue to maintain efficiency and drive, but it is highly probable that the smaller enterprises—which in any country account for more than half of industrial, commercial and agricultural employment—would sink to a pretty low level of efficiency.

Much the same distinction between large and small enterprises also applies to the question of access. In any system, private or public,

it is easier for large enterprises to raise the capital they need than for small enterprises. This difference would probably be increased if capital were available only from a state agency, because the political and other strength of large enterprises would make it easier for them to insist on getting the capital they required. The same strength might also give them more monopolistic power, to intrigue for capital and other resources to be denied to new and smaller rival industries or establishments or commodities. The small enterprises, and especially those which were anxious to experiment with untried ideas—new commodities, new inventions and so on—would probably find it even more difficult to get the necessary backing than they do in a system of private enterprise.

Much depends on how widely diffused is the control of resources. If no capital, labour, or materials can be obtained without a permit from a central authority, entrepreneurs have little room for manœuvre, whether in a private enterprise system or in a system of public ownership. The centrally planned economy, whether private or public, is then driven in directions determined by the planners. Such an economy is superior to an unplanned economy in attaining a specific objective, since unplanned economies have no specific objectives. A planned economy is better at producing the sinews of war, and this is why all economies come to be highly planned in time of war. A planned economy is also better at imposing a high level of capital formation; or at creating a large industrial sector; or at any other single objective which planners set themselves—whether it be irrigating deserts, or building houses, or whatever it may be. Where the planned economy is inferior to the unplanned is if there is no single objective towards which effort must be concentrated. For then the judgement of individual entrepreneurs is as good as or superior to the judgement of the planners at the centre; there is no single direction in which the economy should go; and it is therefore best to leave each person free to make the best use of the resources available to him in the circumstances in which he finds himself. This applies equally whether the entrepreneurs are private persons or public officials. An economy in which all industrial capital is owned by the state need not for that reason alone also be a centrally planned economy; for the state can decide to confine its functions to those of a shareholder, and to leave its officials free to produce what they like, with what resources they can, subject only to the test of profitability in the market. Even if it is the sole source of capital, it may distribute capital through a multiplicity of agencies competing with each other, instead of through a single central control; so that the firm in search of capital may have several chances of getting it. Planning and public ownership are not the same thing;

the world has had both unplanned public enterprise and also strictly planned private enterprise.

A corollary of the distinction between having a single objective and having no objective, or a multiplicity of objectives, is that planning is less harmful in countries which merely follow the leadership of others than it would be in countries which pioneer. In advanced industrial countries like Britain or the United States, nobody knows what the pattern of the economy will be or ought to be in fifty years' time; what new goods will dominate the market which have not yet even been invented; what new modes of transport will be important; what the shops will be like; and so on. If such economies were now put into the strait-jacket of central planning, and authority given to a small group of persons in a central office to decide what developments to encourage or to suppress, we can be fairly confident that growth would be retarded. That is to say, we cannot by any means be confident that output will not rise faster, since capital formation may be greater, but we can be confident that there will not be so many new goods or so many changes in the patterns of production and consumption. There may be more of the old, but there will be less of the new. The situation is very different if a backward country is merely following in the lead of the pioneers, ten or fifty or a hundred years after the pioneers have shown what is worth doing. Even in these circumstances strict central control may hamper those adjustments which are always necessary as techniques and institutions are transferred from one environment to another. But it is not as easy for the planners to go wrong as it is in the pioneering countries, because they have models which they can copy.

Much depends also on how much the particular community has learnt of the art of public administration. Most governments are, and always have been, corrupt and inefficient. The art of creating a public service relatively free from corruption, relatively efficient, and fairly anxious to maintain high standards in these matters, has been learnt only slowly, and only in a few countries. Hence in most countries of the world economic growth would certainly be impossible if the adoption of public ownership or of central planning were to put into the hands of present administrations the entire responsibility for economic affairs. In countries where government is corrupt and inefficient, *laissez faire, laissez passer* is the best recipe for economic growth. It is only as an efficient administration is built up that the relative merits of private enterprise and of public ownership or control merit serious debate.

In practice the real problem is not to choose between private initiative on the one hand and government action—whether planning or nationalization—on the other, but rather to combine these two in

the most fruitful proportions. Arguments for or against planning in general, or for or against public operation of industry in general are a hangover from the nineteenth century. In practice it is also clear that the role of governments in economic development is and ought to be much greater now than it has been in the past, if only because of the greater rate of growth which has now come to be generally expected. Much which developed only slowly over the centuries through individual effort in the countries which have pioneered in material advancement, may now be expected to happen in as many decades under government auspices in the more backward countries which have now started to tread the same road. The role of government in economic life is growing, and will continue to grow for some time yet. The problems which this creates we shall leave for more detailed consideration in Chapter VII.

(b) Vertical Mobility

Economic growth is usually associated with a high degree of vertical mobility, upward and downward. There are several reasons for this.

In the first place, if the upper classes—in business, government, science, and other spheres—are not continually refreshed from below, they degenerate, both biologically and culturally. Biological degeneration takes place because if a thousand intelligent men have a thousand sons, the sons will not all be intelligent. If we assume that at some point in the community's history a biologically superior group has taken over the upper class positions, and if this group henceforward never allows descendants of any but the original members to hold these positions, then we may fairly confidently expect a decline of biological vigour. A healthy upper class, biologically, is one which allows its weaker members to fall into the lower classes, and which in each generation recruits the more successful members of the lower classes into its own ranks. Similarly, it is necessary to have cultural fertilization. A closed upper class, based on family, usually tends to go in for some form of ancestor worship. Old ways of doing things become sacred, and there is too much looking backwards for success in a changing world. This is less likely to happen if there is constant recruitment of people who have no past to look back on, or who are anxious to forget their past.

The case for recruitment from below, in the interests of growth, must not be confused with arguments for equality. There are always superior and inferior social classes, in the sense that there are always in any community, whether it be capitalist, socialist or communist, people set in authority over other people, whether in business, or in government, or in religion, or else. The point we are discussing is not

whether these divisions should disappear, for there is no doubt that growth would cease in a community if authority ceased; but what is the effect on growth of recruiting for superior positions by birth or by other tests. Again, those who are to exercise authority need special training for the purpose. They get longer education than the rest, and more privileges both during their training and afterwards. Some rich communities may be able to afford to give a long and expensive education to all children, but most communities cannot afford this, and so discriminate; the question is then who is to get the privileged education—whether the choice should depend upon birth or upon other tests.

If children could be selected for leadership solely on the basis of their biological inheritance, by intelligence tests and in other ways, no case at all could be made for associating growth with privileges of family status. The fact is, however, that a man's qualities depend also to a large extent on what he learns from his culture. Some part of this he learns in school, and in other institutions not connected with his family, but he also learns a good deal from his parents, and it does matter who his parents are. We can see this most clearly if the culture of the ruling class is quite different from that of the ruled. For example, in the West Indies in the nineteenth century the culture of the white ruling classes was quite different from that of the newly emancipated black slaves. The whites argued that all positions of importance should be reserved to their children, who had been brought up in their culture, and asserted that the islands would soon revert to barbarism if black people were allowed into positions of responsibility, however high their biological endowment might be, because of their inferior cultural inheritance. Nineteenth century white culture in the West Indies was not, as it happens, at a high level; it was generally despised by Englishmen for its immorality, and its lack of artistic achievement; and its backward techniques and lack of progressive business sense have bequeathed continuing poverty to the islands. All the same, it was superior to the black culture of the time, and the islands would probably have been even more backward today if universal adult suffrage had been established in 1838. The point at issue, however, is not equality, but the system of recruitment for privilege. If there could have been devised some system for recruiting the more intelligent blacks and giving them special training for their responsibilities it is not by any means clear that they would not have governed the islands better than they were actually governed. This policy was pursued by the Ottoman rulers, who recruited young Christian boys and trained them as Moslems for the major positions of responsibility; and most historians attribute the vigour of the Empire partly to this system. The French, also, have pursued similar

policies in parts of their African Empire, training selected Africans in French culture, and opening to them the highest posts. We may therefore conclude that, even when the culture of the ruled is quite different from that of the rulers, there may yet be advantage in opening the highest posts to the children of the ruled, provided that they get special training. It follows all the more that if we are dealing with homogeneous communities, where the cultural traditions of all the social classes are much the same, there is a case for restricting superior positions to people of superior training, but there is no case for restricting them to people of 'superior' birth.

When we say that the upper classes will degenerate if not refreshed from below, we are assuming that the upper classes are restricting recruitment to their own children. They may, however, be drawing a line which allows themselves considerable scope. For example, the white population of the Union of South Africa is about twenty per cent of the whole. If, therefore, superior positions are open only to whites, there is still considerable choice, providing that all the two million whites are eligible. Such a group can probably maintain its vigour indefinitely, new families coming to the top in each generation while others make way for them. In contrast the whites of the West Indies, who constitute less than three per cent of the population, could not possibly have maintained a vigorous monopoly of leadership, even if they had begun with superior biological endowment, since when one family produces duds there is no other family rising up out of obscurity to take its place.

Alternatively, a small ruling clique may well maintain itself by immigration. In the extreme case such as those British colonies which are ruled but not settled, the ruling class is recruited afresh in each generation by immigration, and can remain vigorous so long as it can attract vigorous immigrants.

Subject to these qualifications we conclude that growth cannot be maintained through several generations if positions of responsibility are open only to members of a limited number of families. This is so even if the families are the best, from the point of view of growth, when they assume power. The position is even worse if these families are of poor biological endowment, or alternatively if their cultural traditions are not compatible with growth. It is often the case that the traditions of the upper classes are not compatible with economic growth. The top class in society tends to despise many things on which growth depends. It may despise work and the enterprising spirit, giving its time instead to hunting, shooting, and dancing, and living on its rents and dividends; it may despise learning, science and new techniques; and it may even despise merit, preferring birth. If superior positions may be filled only by persons raised in such

traditions, growth will not take place. Yet such are the traditions of the aristocracy in most pre-capitalist societies.

This brings us to the point that economic growth may require the displacement of the existing ruling class, and its replacement by another. The existing ruling class may be incompatible with growth because of its outlook and traditions. Or it may be incompatible because the bases of its economic power are due to be destroyed. Growth sometimes strengthens the existing bases, but it may also weaken them. We can see this clearly where the existing ruling class derives its wealth from land or from serfdom. Economic development may raise the value of land or it may reduce the value of land. The existing ruling class has no need to frustrate developments which will raise land values—such as working land for minerals, or putting in irrigation schemes, or making the area into a playground for rich tourists. But the existing class may be expected to frustrate plans for attracting labour away from the land into factories, or for reducing tariff barriers to the importation of cheap food, or for spreading education among the people (which usually makes them dissatisfied with the *status quo*). If the opportunities for growth happen to be such that they would reduce the wealth of the existing ruling class, this class will not be at the forefront in exploiting them and will more probably be at the forefront in trying to prevent their exploitation. Growth will then depend upon the emergence of a new group, and there will be a struggle for power between this group and the old group, struggling for power to alter laws, or tariffs or systems of education, or systems of belief or other ways of living.

Because the development of new types of economic activity is so often pioneered by a rising social class historians have always to look closely at class structure and class mobility when examining periods of rapid economic change. No simple general pattern emerges, however. If one contrasts Britain and Russia in the eighteenth century, much emphasis can be laid upon the relatively more 'open' society of Britain which gave to merchants and industrialists greater freedom of manoeuvre, and greater social status than the landed aristocracy than the commercial classes had in Russia. But if one contrasts nineteenth century China and Japan it is not easy to establish that Japanese society was more open in this sense than Chinese society. There were some differences in the status and opportunities of the commercial classes in the two countries, but the differences were not great enough to account for the differences in development in the last third of the century. If the Japanese case is contrasted with the British, one observes that instead of a slow growth of the commercial classes through the centuries, to eventual domination, there is a revolutionary outburst by a lesser branch of

the aristocracy, which takes the commercial classes under its wing only after it has successfully made its revolution. This emphasizes that social changes which have economic consequences are not always made by the commercial classes—the respective roles of nationalist leaders and of commercial leaders in the contemporary anti-imperialists movements also stress the same point (see section 5(a) below); but it leaves untouched our main point, which is that it is easier for new economic classes to develop in an open than in a closed society.

Again, economic growth creates or expands the middle classes, mainly by recruitment from below, and is not to be expected in societies which place obstacles in the way of upward mobility. The middle classes grow because growth involves more use of knowledge in production, and greater co-ordination of resources. The accumulation and application of knowledge makes it necessary to have an increasing proportion of skilled persons in production—of engineers of all grades, of scientists and generally of people with several years of education and training—and a rising standard of life also creates demands for skilled services, for dentists, teachers, musicians and other purveyors of service. Growth also requires greater co-ordination because it is associated with greater specialization and with an increase in the skills of production; consequently it is necessary to have more foremen, more accountants, more managers and generally more people in supervisory positions. One of Karl Marx's most striking prophecies was that economic growth would be associated with the emergence of an ever widening gap between the capitalist employer and the worker, but exactly the opposite has happened, and we can see why it has happened. Karl Marx thought that social stratification depended entirely upon the distribution of ownership of the means of production, but we can see that the rise of the middle classes has followed from the accumulation of technical knowledge and from specialization, co-ordination and the increased scale of operations—factors which are independent of the ownership of the means of production, and which, operate equally in capitalist, socialist or other patterns of ownership.

We cannot therefore expect vigorous economic growth to occur in communities where social mobility is prevented by slavery, by caste, by race barriers, by social snobbery, by religious differentiation or the like—unless the privileged group is large relatively to the whole, or refreshes itself continually by immigration. And, in any case, even if the privileged group remains vigorous and enterprising, the community as a whole must lose because it is depriving itself of using the talents of members of the lower classes. Other things being equal, a community which is free from barriers to mobility must show more

rapid growth than a community which denies opportunity to the majority of its members.

In practice, the more 'sensible' aristocracies allow as much vertical mobility as is necessary for vigour, even when they are careful not to allow any more than this. Any class includes in its membership people of superior, of average and of inferior talent. The 'sensible' aristocracy permits people of superior talents to rise, and people of inferior talents to fall. This is all that the maintenance of its vigour requires. At the same time it protects its own average members against the average members of the lower classes. The class structure of society is thus upheld, since people of average talent in the lower classes are not allowed to displace people of average talent in the upper classes; while at the same time the aristocracy is continually refreshed. Since only a little vertical mobility is needed to keep the upper classes vigorous, a class structure and economic growth are not incompatible, provided that this minimum of mobility is allowed. At the same time, social peace is easier to maintain if it is clear that the most clever Jews or Negroes or working class boys will not be prevented from reaching the highest rungs of the ladder, even though they are only a negligible proportion of their class, and even though the great majority of average people in their class are kept firmly 'in their place'. Nevertheless however 'sensible' the aristocracy may be in tolerating these exceptions, a community must be depriving itself of opportunities for growth if it restricts the opportunities for vertical mobility.

One partial exception to this generalization is worth noting. In some circumstances discrimination against a group may cause that group to show vigorous development in directions other than those which interest the ruling class. Thus if the ruling class despises economic activity, and at the same time prevents some other group from expressing itself in the activities which the ruling class honours—such as the military professions, government, and the church—the despised group may cultivate instead the opportunities for economic activity, and may distinguish itself in this way. The position of the Jews in Western Europe springs at once to mind; they concentrated on money making in the days when this way of life was despised, and was almost the only one open to them. If discrimination against Jews disappeared, and Jews could distinguish themselves without hindrance in the professions, in science, in agriculture, in the military forces, and in all the more 'respectable' ways of life, they would probably cease to be better at making money than most other groups, and by reaction, might well grow to despise this way of life, and become inert at it. Similarly in India the Parsees, being ineligible, because of their religion, for joining the governing classes, concentrated on economic activity, and became more expert at it

than their hosts. This is a development we expect to see in small immigrant groups who, because of their religion or their race or some other difference merge neither with the upper nor with the lower classes, and concentrate on making a living for themselves—the Chinese in South-East Asia are another well known example. We shall have more to say about immigrants and their problems in Chapter VI.

(c) Freedom of Markets

Economic growth requires that men should be free to hire resources, and to enter trades—whether on private account or as public servants being a separate issue, which we have already considered in section 3(a) above. Here we discuss first difficulties in the way of access to resources, and secondly difficulties of access to markets.

By access to resources we mean that the entrepreneur should be able to buy, borrow, or hire factors of production, since if a person may use only his own labour, land and capital, the economics of specialization and of large scale enterprise are excluded. In this section we shall not say anything about capital, beyond noting that growth must be restricted if religion or custom frowns upon the lending of money at interest; institutional problems of capital are reserved to Chapter V. We discuss in this section the marketability of land and of labour.

There must be access to land. It is not always necessary to be able to buy land freehold, but at least it must be possible to get a secure lease with long tenure, especially if the enterprise involves making durable investment in the land, in the form of buildings or irrigation works or mining tunnels or other forms. Most systems of land tenure provide access to land, though usually with restrictions. Thus, land may be denied *de jure* or *de facto* to individuals and allowed only to collectives, as may be the case in the U.S.S.R. Or it may be denied to 'strangers', i.e. to immigrants, or to members of some particular race or creed, or, as in parts of India, to 'non-agriculturists' (a measure aimed at preventing moneylenders from buying out the farmers). There may also be restrictions on the uses to which land may be put, especially in these days of the geographical zoning of land use, under the name of 'town and country planning'. Or there may be restrictions on tenure; in some countries land cannot be bought freehold, but can only be leased; and the leases may not give sufficient security of tenure to justify making some kinds of long term investment. Difficulties also arise if there is uncertainty as to the ownership of land; modern countries have cadastral surveys and land registers, but there are many places where a person who purchases land may be harassed by litigation about the boundaries or about the title of those from whom

he bought. Clarification of titles is a necessary step in economic growth.

Though most systems provide that the owners of land can part with it if they desire to do so, communities nevertheless differ in their willingness to sell or to rent land. Ownership of land is frequently tied up with pride of family, and the latter may cause people to be unwilling to part with land which has been in their family for generations, and in which, sometimes, their ancestors are buried. Land ownership is also tied up with social and political status, so that some people regard land not primarily as a means of production, or as a source of wealth, but as a mark of status, and as something to be held on to even at a substantial cost of annual income. Such considerations are probably most powerful in countries where land is very unequally distributed, e.g. where all the land belongs to a small aristocracy; it is usually much easier to buy or rent land in countries where ownership is widely diffused. The attachment of familiar or political sentiments to land ownership reduces the mobility of land as a resource, and restricts economic growth. The existence of such sentiments has caused some governments to take powers to effect the compulsory sale of land, as for public purposes or for railways, or for transforming large estates into small farms or *vice versa*; or powers to effect the compulsory exchange of land, in consolidation schemes or in town planning schemes. There is probably no country in the world where land is bought and sold solely for its value as a factor of production, and no country where non-economic factors do not frustrate schemes which would otherwise increase output.

Access to land may also be denied in the social interest, where the effect of easy access would be to diminish natural resources. Some uses of land inevitably diminish natural resources. Of these the most important is mining; other examples are the building of aerodromes on fertile soil, or the erection of ugly structures in places where they spoil the view. Some other uses of land may but need not be destructive; agriculture can be done in ways which maintain soil fertility, and the cutting of timber can be done without destruction of forests; but users have not always the interest, or the sense, or the forethought to adopt the methods of conservation. It is not always in the public interest to deny access on these grounds. For example, it may be in the public interest to extract minerals, and to use the proceeds for creating other resources (including schools); or it may be more useful to have an aerodrome than to have its equivalent in cultivated land. But denial on these grounds is not necessarily incompatible with growth. On the contrary the control of land use may be fundamental to growth, since many communities have come to grief for no

better reason than that they have wasted their natural resources, perhaps by exhausting the soil, or by destroying their forests, or by working out their minerals without reinvesting the proceeds in creating other assets. (See Chapter VI, section 1(b).)

From land we turn to access to labour. If the economies of large scale production are to be enjoyed, it is necessary to be able to organize large numbers of workers under central control, whether in collective, in state or in private enterprises. And, because growth involves change, it is also necessary that labour should be mobile, leaving some enterprises and joining others. In authoritarian societies this mobility can be enforced by issuing administrative orders telling workers where they must work; even democratic societies resort to such compulsions in wartime. In peace time however, democratic societies rely on market processes; surplus labour is dismissed, and enterprises which want labour bid for it by offering wages.

In practice, labour is mobile only in so far as it is dependent on wage employment. It is very hard to get labour in a community where everybody has all the land he needs to satisfy his requirements. Hence one of the conditions of economic growth is the creation of a landless class. This may be done by depriving the farmers of land, as was to some extent the effect of the enclosure movement in Britain; or it may result from overpopulation. It is not a phenomenon confined to capitalism. Any system which is based on large scale organization, and which provides for change, must depend on a wage earning class, or economic growth would be impossible. In any case a high income per head and a population of which the majority are wedded to the soil are not compatible with each other on the side of the demand for labour, no less than on the side of supply. For a high income per head is associated with spending only a small proportion of income on food; or to put it differently, is associated with only a small proportion of the population being required on the land. In an efficient country like the U.S.A. the whole population can be fed if one-sixth of the population engages in agriculture. Even if a country makes its living by exporting agricultural products in exchange for manufactures, it will, at currently high standards of efficiency, require not more than one-third of its people in agriculture. Protest against the separation of the people from the soil has been a fruitful source both of political agitation and also of nostalgic poetic sentiments, but to the economic eye a community which needs to have the majority of its people working on the land is merely demonstrating its inefficiency. It must, however, be remembered that much of the protest against the separation of people from the land has been against compulsory proletarianization. If Africans are driven out of their reserves by high taxation to make them work in mines, there may be an enormous

increase in output, by any means of measuring output; and yet the majority of the people may be much worse off, their lands uncultivated, their wives and children left lonely and hungry for most of the year, and their tribal organization, with its ethical code, seriously disturbed. As we emphasize in the Appendix, growth of output is not synonymous with growth of happiness or with welfare. Fortunately they are also not always antagonistic.

Access to labour is restricted not only by widespread ownership of land but also by institutions which tie people to particular occupations or employers, such as slavery, serfdom, caste, racial prejudice, or religious discrimination; and by institutions which deprive the individual of the incentive to seek remunerative employment, such as the extended family system, or generous social security provisions. All such institutions reduce the mobility of labour, and make it less easy for new firms or new industries to establish themselves and to grow. This is why the promoters of new industries whether they be governments or private persons, are usually hostile to such institutions. The serfs' best friend is always the employer, in a new industry who cannot get the labour he wants: the status of Negroes in the Union of South Africa or in the southern states of the U.S.A. would be raised faster by a rapid growth of factory industries in those places than it could be raised by any other means. And this also is one of the reasons why there are always powerful classes opposed to economic growth, since it threatens to cut off the branch on which they sit.

In the early days of capitalism access to labour was not regulated by the state; employers and workmen were free to contract on any terms they pleased, short of slavery or its imitations. In these days, however, the contract to work is ringed with restrictions. The state forbids certain contracts, such as the employment of children, or the employment of women in mines. In some countries it stipulates maximum hours, or minimum wages. It may regulate apprenticeship. It protects the rights of trade unions; and so on. Some of its prohibitions restrict economic growth, but they are not, of course, necessarily bad because they do so.

We turn now to consider access to the consumer. Economic growth requires that men who have new ideas should be free to put them into effect, even though they may thereby do damage to their competitors. Growth requires freedom to compete; at the same time growth can be so damaging to competitors that it stimulates efforts to suppress competition. When we say that men should be free to put their ideas into effect we confine ourselves to ideas which increase competition; ideas for restraining competition, such as exclusive contracts, or market sharing arrangements are damaging to growth in so far as growth depends on competition.

The competition of new ideas—new products, new methods of production or distribution, new styles, new sources of supply—damages those whose fortunes are tied up with the old, and whose resources are ‘immobile’, in the sense that they cannot easily be adapted to the new ideas, or that they cannot be moved into some other occupation or trade without loss. Most resources are immobile in this sense. Labour is immobile as soon as it acquires a special skill; it may remain mobile between several industries while losing mobility as between occupations. So also land and reproducible capital are immobile in greater or less degree. Hence all men have some interest in restricting competition; our ‘instinct’ to compete with others has a counterpart ‘instinct’ to prevent others from competing with us. In the world of labour this reveals itself in the restrictive practices enforced by group sanctions—in the restrictive apprenticeship regulations of trade unions and professional associations; in resistance to ‘dilution’ and insistence on passing prescribed tests, which are sometimes necessary in the public interest, and sometimes not; in making it expensive to acquire skills; in rigid demarcations of jobs, as in the building trade, or in the line drawn between dentists and dental mechanics; and even, in some circumstances, in actual destruction of machinery and in murder or intimidation of rivals. Similarly, in the world of business, there are the market sharing arrangements, the price agreements, the amalgamations, the exclusive licences, and all the other tricks designed to reduce the market to ‘order’.

Now though it is true that economic growth, by causing change, stimulates resistance to competition, it is probably nevertheless also true that competition is more acceptable in communities the more rapidly they are expanding. This is partly because loss is more easily avoided in expanding than in stagnant societies. If a person over-invests in an industry he will have to endure loss for some time, but, if there is a secular growth of income, demand will catch up with supply, and the period of loss will be the shorter the more rapidly income grows. Again, if a person becomes unemployed in one industry because of technological change he will gain employment elsewhere the more easily if a general expansion of the economy is taking place all the time. So, while growth shakes people up more, and reduces the chance of staying in one place, it also at the same time creates so many new opportunities all the time that it seems less necessary to rely on monopolistic protections in growing than in relatively stable societies. Moreover, in societies where economic growth is taking place, the harm done by monopolies is more obvious, and there is greater resistance to them. Hence the public at large is more favourable to the idea of competition, and towards deliberate

efforts by the state to protect competition, if the community is where economic growth is rapid, than if there is relative stagnation.

The harm done by monopolies is more obvious in the sphere of economic growth than it is in other economic spheres. Most of the economists' writing on monopoly is about an abstruse topic the significance of which does not intrude itself obviously upon the public at large; for the economists' literature is concerned mainly with the effect of monopoly upon 'general welfare' by frustrating the 'marginal' proportionalities which 'ought' to determine the allocation of resources. The general public understands better, and is more interested in, the effect of monopoly on the distribution of income, a subject which it is not easy to separate from personal preferences for the individuals who suffer from monopoly, as compared with those who gain. Hence, if monopoly has to be discussed without reference to economic growth, the discussion is either abstruse and without meaning for the general public, or else it is real but incapable of solution except in terms of preferences for one group of people rather than another. Thus, according to personal inclinations, some people are for workers' monopolies, but against business men's monopolies; for retail traders' monopolies, but against manufacturers' monopolies; for farmers' monopolies, but against industrialists' monopolies; for booksellers' monopolies, but against doctors' monopolies; and so on. If the public has an attitude towards monopoly, it is probably merely that it is for good monopolies and against bad ones. The nearest translation of this seems to be that it favours monopolies of the weak, and not of the strong; though this is not always consistent with the rival translation which makes the public also favour monopolies of the efficient but not of the inefficient.

On the other hand, however diverse may be the attitudes to monopoly and its effect on the distribution of income, most people *in a society which is used to economic growth* would agree that monopolies are good in so far as they promote growth, and are bad in so far as they restrict growth. The reason for this is that the prospects opened up by growth are generally believed by most people who are accustomed to growth to be more important than the prospects opened up by redistributing national income. If income per head is growing by two per cent per annum, everyone can be twenty-two per cent better off in ten years, and this much exceeds any conceivable redistribution of income between classes, in the absence of economic growth. When we take account also of the fact that economic expansion itself also insures individuals against serious loss from competition, it is easy to see why competition is more favourably accepted in expanding than it is in stagnant societies.

This is not to say that monopoly is necessarily considered to be incompatible with economic growth. On the contrary, from the Mercantilist writers onwards, the most cogent supporters of monopoly have been those who have argued for it on the ground of its necessary part in economic expansion. Their argument has also been the more cogent because of its deliberate limitations. Their case for monopoly is twofold. First, that it is necessary to the efficient functioning of certain large scale operations. And secondly that it is necessary in some early stages of development.

If an industry is such that average costs of operation fall as output increases, up to the limits of what the market will absorb, because of economies *internal* to the firm, then it is cheaper to have one firm than several. This is not always a decisive argument for monopoly. For on the other side, we must take into account the fact that the existence of monopoly frequently stifles initiative and enterprise. So if the economies of scale are not substantial, it may well be cheaper *in the long run* to insist on competition, where competition is feasible, than to purchase temporary economy at the cost of ultimate stagnation behind the protection of monopoly. Balancing the pros and cons is a matter of judgement in each case.

If there are substantial economies of scale, monopoly will often be created by the competitive process. For the bigger firms will be able to drive the smaller out of the market, except in so far as the smaller specialize in types of the commodity or types of service for which there is a limited market. There are, however, cases where it is cheaper to have only one firm right from the start, as in planning the distribution of gas or electricity or water. There are also cases where the competitive process is brought to an end not by the emergence of a single large firm, but by agreement between two or more firms to cease competing with each other. Such agreements sometimes result in lower costs of production or distribution, but this is seldom either their main purpose or their main effect; their main purpose and effect being merely by raising prices, to redistribute income from consumers towards producers. These agreements do reduce costs in some cases, most notably when they result in standardization or in simplification. For sometimes in the absence of such agreements a firm will manufacture its commodity in a wide range of sizes or styles to ensure its standing in the market. The agreement may provide for each firm to specialize on a narrow range of styles, thus reducing costs of production; it may even also achieve a reduction in the total number of styles offered on the market; and it may sometimes, by sharing the market geographically, also reduce costs of marketing and of transportation. Agreements which aim at reducing costs and prices are the exception rather than the rule, but they do exist.

Another aspect of the advantages of large size is found in the argument that monopolies are essential to growth because only monopolies can afford to spend the large sums needed for research and development in these days. This argument has various strands, which have to be separated. In the first place, it is not true that all innovations require large expenditures. There is still a good deal of old-style application of ingenuity and adaptation by persons using quite small resources, and still a good deal of innovation by small firms. The costly discoveries are those which depend upon team work by highly trained chemists or physicists, and have therefore been most obvious in the chemical and the electrical engineering industries. Some other industries, such as steel manufacture, also have scope for the highly trained team, but in most other industries a mechanical flair and an ingenious and fertile mind are still the best equipment for invention. In the second place, monopoly is not the same as size. The cartel or market sharing type of monopolistic arrangement does not rest on the size of the individual firm, and seldom provides for joint research activity. It would therefore be more accurate to argue that in certain industries some types of research cannot be financed by small or medium sized firms, so that the large firms in these industries may have an innovating advantage. And in the third place this advantage can to some extent be offset if research is done co-operatively, or in government laboratories, as it is in some British manufacturing industries, and in the agriculture of most countries. It is true that the outside research organization is not a complete substitute for the research department inside the firm, which is in touch with the firm's daily problems, and able to adapt itself to them. On the other hand it is not the daily problems which require expensive research, but the fundamental long term work dependent on advancing the frontiers of science, and this can be done just as well in co-operative or government laboratories, with possibly the added advantage that results may be diffused more quickly through the industry. This is not, of course, to argue that research should be confined to laboratories working for the industry as a whole; on the contrary such laboratories are just as likely as the laboratories of the large firms to miss the more fruitful lines of enquiry. We are arguing only that the disadvantage of the small firms can be diminished through co-operative organization. Research cannot be adduced as an argument for monopoly since one of the surest ways of ending scientific progress would be to create a monopoly in research. (We discuss these problems more fully in Chapter IV, section 1(b).)

We have not, however, completely disposed of the argument for size, because of the difference between research and development. It is true that group research can have the same results as are produced

by the laboratory of the large firm. But it is also true that when the development stage is reached, the advantage may be with the firm which can put out large sums in carrying the innovation to the stage of commercial exploitation. The ability to finance expensive innovations is one of the undeniable advantages of the large firm, as is the ability to enjoy large scale economies of production. Sometimes these advantages result in monopoly, and sometimes they could not be enjoyed without first creating monopoly conditions. It is occasionally true in some industries that monopoly promotes growth, in the sense that size promotes growth, and that size and monopoly are related. But we must not exaggerate this into a general rule for all industries and situations.

Apart from these questions of economies of scale, it may be desirable to protect a new industry in the early stages of its development, provided that the protection is removed within a reasonably short period of years. This position first received legislative support in the Statute of Monopolies of 1624. In this statute after two generations of heated controversy, it was enacted that 'the state could accord protection to new inventions, but that this protection must cease after a fixed period of years'. This is the origin of our patent system. A new invention did not mean in those days only what it means today, it covered also new industries introduced to the country from other countries, however old and well established the techniques of the industry might be in other places. Hence the statute implicitly recognized what we now call the 'infant industries' argument, as well as the arguments which feature in current expositions of the patent controversy.

Despite centuries of disputation, nobody has improved upon the position the legislators took in 1624. Some new ideas need protection because of the cost of making them commercially profitable. This may be the cost of research, or of development; the cost of training workers; or the cost of familiarizing the public with a new commodity. And so governments have always been willing to grant protection to new industries, whether in the form of tariffs or licences, of subsidies, or of patents. In some circumstances it is possible to examine each claim on its merits, and to adjust the type and duration of protection accordingly, as is being done at present in some under-developed countries which are giving encouragement to new manufacturing industries. In other circumstances, and especially in dealing with the new ideas which claim patent protection in industrial countries, individual treatment is out of the question; the law specifies the same number of years of protection for all cases, and leaves it to interested parties to determine in the courts what is and is not new. There is much to argue about in the details of patent legisla-

tion—how many years' protection should be given, who should be protected, from what date the protection should run, and so on—but the basic principle, that some new ideas require limited monopolistic protection if they are to be developed at all, is generally accepted.

It is also generally agreed that protection must be limited in time, or it will damage growth. This is based on the belief that men are more likely to make and utilize new discoveries if they are under pressure to do so than if they are not. It is also based on the beliefs that new firms are more likely to introduce revolutionary ideas than old firms—partly because old firms find it hard to keep vigorous, and partly because old firms are committed, both materially and intellectually to old techniques, and are not so likely to step out in quite new directions which might destroy their existing capital. These beliefs, like most generalizations about human behaviour, are clearly subject to exceptions. Some monopolists are most vigorous in introducing innovations, and some old firms do succeed in keeping remarkably young. All the same, a good proportion of innovation is done by new firms coming on to the market, and another good proportion of what the old firms do results from fear of losing in the competitive race. It is clear that the rate of innovation would be reduced if no new firms were ever allowed to enter the market. Freedom of entry is essential to economic growth. Hence, while it is important to protect the new against the newer, it is equally important to protect the new against the old. Patent protection serves the first purpose. Constant review of patent legislation to prevent its abuse serves the second purpose. And there is also need for general anti-monopoly legislation to prevent powerful firms, or combinations of firms, from using their power to deny new firms access to the market—by such devices as stop lists, exclusive dealing, price wars, price discrimination, the tying up of outlets, the monopolization of sources of supply, and the like. The drafting, the interpretation and the enforcement of such legislation calls for nice judgement, since monopoly is both needed for growth in certain circumstances, and inimical to growth in other circumstances. This branch of the law is therefore frequently among the more perplexing and obscure; but a task is not the less necessary because it is difficult.

Newly developing countries are particularly prone to monopoly because of their shortage of entrepreneurs. The risks of investment are greater in such countries than in the more advanced, since less is known of their problems and potentialities, and the less experienced and financially weaker entrepreneurs tend to be wiped out in recurring crises. One can see this very clearly in colonial trade, which tends to be concentrated in the hands of a few large and wealthy firms; or again in the history of Japan, whose economic life came

fairly quickly under the domination of a few trusts. The successful entrepreneurs tend also not only to dominate the industries in which they start, but also to spread their interests out from one branch of industry to another, partly because this may be less risky than having all one's eggs in one basket, and partly because each enterprise can help the other, either as a supplier or as a customer. Thus in the early stages of economic development it is not unusual to find close ownership links developing between the various sectors of the economy—between banking, insurance, commerce, 'transport, hotels, newspapers, manufacturing and so on. Doubtless this was the reason why Karl Marx, basing himself on earlier writers and upon his own observations of early nineteenth century capitalism, was convinced that the development of capitalism must be associated with increasing monopolization. The events have not borne out this prophecy (see Chapter V, section 3(d)). With the development of the economy there is also an increase in the supply of entrepreneurship, and in its average level of experience. The risk of investment also declines, since more knowledge about the economy accumulates and since also the problems of the new industries become more generally familiar. It is then not so easy for a few clever minds to dominate the economic scene, and monopoly positions are harder to create and to maintain. In other words there is an 'infant economy' argument for monopoly parallel to the 'infant industry' argument, but, like the latter, it is an argument of temporary significance only, and is subject to the same limitation that a prolongation of the monopoly may reduce the economy's vitality.

Finally, we should note an argument for monopoly which is based upon the high levels of savings and of profits required by a developing economy. According to this argument, it is desirable that a large share of the national income pass into the pockets of those who will save and invest, rather than of those who will spend it upon consumption. The argument is not, of course, meant to be taken to extremes; consumption is the reward for production, and is a spur to further effort, the point at issue is only one of degree. There has been much disputation about the effects on economic growth of the division of the national income between saving and consumption, springing from the proposition that if consumption is too large investment will be too small, whereas if consumption is too small investment will be discouraged, but there seems no reason to doubt that in the early stages of economic development, at least, very high rates of investment can be maintained for several decades without exhausting investment opportunities. Given that growth is not incompatible with a high level of savings, the next stage of the question is how far large profits are necessary in order to have large

savings. It is true that the non-capitalist classes tend to save very little, but it is not necessary for saving to depend entirely upon individual effort. It is feasible for the government also to act as saver, imposing taxes upon the public, which are used either for capital formation in public utilities, or else for lending to private producers. However, if the government cannot or will not be a productive saver, it is certainly true that a developing economy needs large profits if it is to have an adequate level of savings. Even so, the level of profits does not necessarily depend upon monopoly; monopoly may determine the distribution of profits as between one capitalist and another, rather than the share of profits as a whole in the economy. This was the opinion of most of the classical economists. In the early stages of capitalist development, there are usually large reserves of labour available for employment at a subsistence level of wages; it is only in economies where labour is scarce that the level of real wages depends upon competition. It is therefore possible to argue simultaneously in favour of profits being large in the interest of economic growth, while resisting monopolistic practices on the ground that they discourage innovation. (See Chapter V, sections 2(b) and 3(d) for further discussion of these issues.)

In sum, it is clear that the relationship between monopoly and economic growth does not lend itself to simple conclusions. We may perhaps say that monopoly is more likely to emerge, and more likely to be helpful, in the earlier than in the later stages of economic growth. At the same time, monopoly is dangerous at any stage, because of the cloak which it can throw over inefficiency, and because of the power with which it can resist or suppress innovation. Hence, whatever temporary advantages monopoly may have, it is a sound instinct that causes men everywhere to distrust monopoly, and to seek to restrict its powers.

4. SOME CASES

(a) Religion

We have made several references to religion in this and the preceding chapters; it may be helpful to draw them together in a brief summary of the relations between religion and economic growth.

There are two questions to ask in this context. First, how compatible is economic growth with various types of religious attitude? Secondly, do incompatible beliefs stifle growth, or is it merely that such beliefs flourish where the conditions for economic growth do not exist, and are rejected as soon as growth becomes possible? The first question is much easier to answer than the second; and we will take it first.

We have already discussed at some length the attitudes and institutions which favour growth, and need now only enumerate the main points. As we do this it will become clear that every one of them runs counter to the doctrines of one religion or another, though of course some religions are involved more comprehensively than others. First, growth requires that people should be willing to give their minds to ways of increasing productivity, whether because they desire goods, or because they would value additional leisure. The desire for goods may be due either to taking pleasure in the enjoyment of material things, or to the desire for the social prestige and power which go with wealth; and, correspondingly, growth is more rapid in those societies where wealth is an easy road to high social standing. Some religions do teach that salvation can be reached through the discipline of hard and conscientious work, and do elevate the pursuit of efficiency into a moral virtue. Some forms of Christianity also lay emphasis upon the virtues of thrift, and of productive investment. But most religions also teach that it is better to give the mind to spiritual contemplation than to the ceaseless search for ways of increasing income or reducing cost; and practically all religions discourage the desire for material things.

Next, economic growth demands a willingness to experiment. This is the main way that technology improves, and is also the way that changes are made in social relations and in social attitudes. Willingness to experiment is associated in its turn with a desire to discover the causes of things, and therefore with a belief in rationality. As has been pointed out, mediaeval Christian theologians made much of the doctrine that God Himself is rational, and thus helped in laying the foundations for the revival of scientific enquiry in Western Europe. Very few religions share this attitude to the nature of the universe.

Willingness to experiment involves also one's attitude to the sacredness of the universe. So long as it is sacrilegious to dissect the human body, medicine makes little progress. If animal life is sacred, man may have a hard time competing for existence with the cow, predatory monkeys, rabbits and squirrels, the snake, the insects and the microbes. Similarly, certain religious attitudes are opposed to deliberate family limitation and may result in overpopulation, famine and poverty. Much technological progress springs from an attitude that everything in this world is here for the convenience of man, and can be altered by man in his own interest. This is quite compatible with those religions which put man into the centre of the universe, but it is not compatible with religions in which man is merely one manifestation of the spirit of God—and a minor manifestation, at that.

Economic growth also involves the growth of impersonal economic relationships, in which people do business with other people irrespective of kinship, nationality, or creed. The attitude of a religion to strangers is therefore very important. If the religion encourages people to treat strangers fairly—to give honest service, to keep contracts faithfully, and so on—it will facilitate trade and specialization. Whereas if the religion is exclusive, encourages hatred of unbelievers, and divides people instead of bringing them together, it diminishes economic opportunities.

When we come to social institutions, the role of religion is almost always restrictive. This is because religion almost always puts the virtues of obedience, duty and obligation above all others, and especially above the virtue of justice, which sometimes conflicts with the others—and which is any case mainly a matter for the secular power. Hence religion leans heavily on the side of the *status quo*, in family relations, or in political or religious obligation. Now, as we have seen, economic growth flourishes best if the social institutions are such that men think that they are getting the fruit of their effort (and are not being exploited); if trade and specialization are possible (and economic relations are on an impersonal basis); and if there is freedom to manoeuvre economically (including vertical social mobility). None of these requirements is inconsistent with religious doctrines. Nevertheless, the tendency of religion to favour the *status quo* in social relations makes it usually an obstacle to change in any direction—whether leftwards or rightwards. Religion favours neither growth nor decay, but social stability. If the society is based on slavery, religion teaches the slaves to be obedient; but equally if the society is used to a high level of vertical mobility, the priests will be to the forefront in denouncing attempts to restrict opportunity. This generalization must not be pushed too far. Nearly every religion has its prophets, who from time to time arise and denounce the *status quo*. Their influence tends to be restricted, in comparison with that of the hierarchy, who are usually well in league with the secular power and with the aristocracy of the day; but the existence of the prophetic tradition cannot be ignored, and is sometimes decisive. It would also be a mistake to think of the authoritarian aspect of religion exclusively as hindering change, for it has also an important function of re-integration after change has occurred. Society cannot function without obedience, duty and obligation. As times change our obligations alter, and so do those to whom we owe them. Times of change are therefore frequently accompanied by moral disintegration, since the old duties disappear before the new duties are fully understood. It is the task of the guardians and teachers of morality to create and diffuse new codes appropriate to changed relationships.

This discussion so far has focused on antagonisms between religion and economic growth. The antagonism of religion and change, however, comes into focus only if we concentrate upon the religious views of those who are resisting change. If on the contrary we think of the religion of the people initiating change, religion sometimes appears instead as a strongly innovating force. In the first place, religious leaders are not opposed to every kind of change. It is possible sometimes to enlist their support for innovations which do not conflict with their religious principles—for new seeds, or artificial fertilizers, or community development, or co-operative societies—and then the fact that the innovation has religious support may help it to be adopted all the faster. Religion may appear also as an innovating force even if the old religious leaders oppose the innovation. For the innovators have frequently a new religion of their own, or a new version of an old religion, in which they find guidance, inspiration, or codes of conduct which distinguish them from the rest of the community, and which are linked in their own minds with the innovations they are introducing. Periods of rapid social change are often associated with religious ferment—whether we think of the rise of capitalism in Europe or of contemporary events in Africa—and if we are assessing the role of religion we must take account of the reforming zeal of the new religion just as much as of the resistance offered by the old.

Attention is also often drawn to the prominent role played by certain religious minorities in the development of the countries in which they live, e.g. the Jews, the Huguenots, the Quakers, or the Parsees. Several strands account for this. Members of a religious minority may have a peculiar biological toughness, mental or physical, because the troubles they have had to put up with have weeded out the weaker brethren. Those who are left are keen, alert, schooled in a tradition of industry and self-discipline and well versed in the tricks of self-preservation. They also tend to help each other; and though this would bring ruin to all if the group were below average in success, it brings advancement to all if the group has good fortune or ability above the average. The influence of biology in all this is doubtful, but not the influence of tradition. The religious minority may also be denied political advancement, or entry into some of the higher social professions (military, administration, science, etc.), and may thus have no better outlet for its energies than success in business. Again the religious taboos of the majority may prohibit members of the majority from pursuing certain activities (trade, moneylending) or from handling certain substances or creatures (compost, leather, pigs), or otherwise from exploiting profitable opportunities, and if the minority has different prejudices it may be

able to thrive on the opportunities from which the majority exclude themselves. It is not necessary that the religious precepts of the minority be more favourable to economic growth than those of the majority, at the time when the minority comes into existence, for time itself will effect the difference. As the minority adjusts itself to survival, its religious precepts will also change.

On the other hand, it is certainly not the case that all religious minorities thrive economically. For there are just as many religious minorities which, on the contrary, fall behind the majority in economic achievement, e.g. the Roman Catholics in Canada, or the Moslems in India. A religious minority turns to and shines in economic affairs only in those cases where the majority is more interested in other matters. But in those cases where the majority is materialistically inclined, the religious minority is just as likely to turn away from economic affairs, and in striving to keep its own way of life as distinct as possible, it may cultivate instead the professions or the arts, or may deliberately adopt precepts which are hostile to economic advancement.

This serves also to emphasize the fact that the phenomenon we are discussing is not essentially religious: it applies to minorities, whatever it may be that binds them together. Religion is usually much in evidence in these cases because religion is an important factor in binding minorities together. But the essential factor in the situation is that minorities, whether religious or not, tend to excel not in the matters which the majority choose to cultivate but in those to which they attach less importance.

We may therefore sum up the answers to the first question by saying that some religious codes are more compatible with economic growth than others. If a religion lays stress upon material values, upon work, upon thrift and productive investment, upon honesty in commercial relations, upon experimentation and risk bearing, and upon equality of opportunity, it will be helpful to growth, whereas in so far as it is hostile to these things, it tends to inhibit growth. Of course, the code may not be fully effective; people do not always act in accordance with the religion they profess. Priests are expected to be more strict in their behaviour, and, as was pointed out in the previous chapter, it has been suggested that religions which persuade a large proportion of the people to retire into religious orders (e.g. Tibet) impose a check on growth, whether by deflecting from economic pursuits too many of the more thoughtful people, or by reducing other output too much (assuming that the religious orders are not themselves engaged in agriculture, manufacture and other economic pursuits). Priests apart, people tend to ignore religious precepts which conflict with economic interests. However, religious

teaching is often strong enough to prevent people from doing what it would clearly be in their interest to do—e.g. from killing sacred cows or removing sanctified oppressors.

This brings us to the second question: does religion have an independent effect in shaping economic behaviour, or does religion merely reflect economic conditions? It is obvious that religious beliefs change as economic and social conditions change. Religious doctrines are continuously being re-interpreted, and adjusted to new situations. Hence some people go so far as to argue that religion is neither a hindrance nor a help to change. If the religious doctrines of the day are incompatible with certain changes, this is merely because the underlying economic and social conditions are not yet ready for such changes. When these conditions are ready, the change will be effected, and the religious teachings will be adapted to support the new *status quo*. According to this approach, almost any religion can adapt itself to almost any political or economic revolution. For there will always be among its priests some who are willing to re-interpret its doctrines, whether from conviction, or from frustration, or from ambition. These priests come into power after the revolution, remove their opponents from office, and swing the church into line. Or, in less extreme cases the dogma is modified either because the priests see that the people increasingly ignore it, or because they see for themselves its irrelevance to changing circumstances.

This seems too simple a view. In the first place, even if it were true that religious doctrines always gave way to economic interests, it would still not follow that they do not restrict change, for they might both slow down the rate of change, and also distort its effects. It may be that the doctrines will change in the end, but in the meantime they can hold up change for many decades, or even centuries. After all, social change results mainly from what people do, and this in turn is mainly the result of what they believe. Religion permeates our beliefs because religious instruction (whether formal or informal) begins while we are still on our mothers' knees. What we learn late in life for ourselves we can often unlearn by argument or demonstration, but what we have absorbed in childhood is much harder to cast out. Even if religion could not prevent change altogether, it could certainly reduce its rate and its effects.

More fundamentally we cannot accept the conclusion that it is always economic change which causes religious change, and never religious change that causes economic or social change. It is not true that if economic interest and religious doctrines conflict, the economic interest will always win. The Hindu cow has remained sacred for centuries, although this is plainly contrary to economic interests. Or, to take another example, the failure of Spain to seize

and exploit the economic opportunities presented by the discovery of the New World cannot be explained satisfactorily without taking into account religious beliefs and attitudes which hindered Spain in her competition with other countries. It is possible for a nation to stifle its economic growth by adopting passionately and intolerantly religious doctrines of a kind which are incompatible with growth. Or it is possible, alternatively, for conversion to a new faith to be the spark which sets off economic growth.

(b) *Slavery*

The institution of slavery merits special consideration because it has existed through so much of human history. It has some obvious disadvantages, from the point of view of economic growth, but has nevertheless often been the basis of great prosperity. We can now examine this institution in the light of the principles which we have discussed in the preceding sections of this chapter.

Beginning with the counts against slavery, let us take the question of incentives. Slaves are notoriously inefficient and unwilling. A horse, if it is well treated and well cared for, will gladly give all the effort which a well loved master demands. Some slaves are like horses in this respect, but most are not. The difference arises in their humanity; their sense of justice revolts against a system which uses their labour to enrich others; and their sense of freedom chafes against restraint. Even if the majority of the slaves would rest content, there is always a minority who feel their humanity strongly, and who communicate these feelings to the others. If the slave is in close personal contact with a master, personal ties may smooth the relationship; but if slaves are employed in large scale enterprises, where they see much of each other, and little of the master, it is certain that they will resent their condition, and will react by doing as little as they can. There ensues a trial of strength between the masters and the slaves, in which each side probes to discover how far it can go. Out of this may come an 'equilibrium', in which it is tacitly agreed what are to be the 'traditional' rights and duties of each party. The slaves then do as little as they can, without incurring punishment, within the limits of this tradition, and no more.

In some systems all that the slave produces belongs to his master, whereas in other systems either law or custom allows the slave some free time and property which he may use on his own account. In the latter case the slave usually works much more diligently and effectively on his own account than he does when working in the master's time. Some masters, observing this, may restrict the slave's free time, alleging that the slave is exhausted by it, and unable to fulfil his duties. Others find it pays them to convert their right to

labour into a percentage of the slave's produce, so that slavery may shade, imperceptibly, into a system of metayage. Certainly slaves work more effectively if they have merely to pay a percentage to their masters than they do if all that they produce is on the master's account.

Secondly, slavery affects not only the slaves, but also the mentality of the slave-owners themselves. For the slave-owners are most likely to acquire an attitude towards work which is damaging to growth. Work is held in contempt, being fit only for slaves. Even the management of slaves is handed over to hired managers. The slave-owners, men and women, give themselves over to idleness, or to activities, however noble, which are not connected with making a living. They migrate from their estates to live in fashionable cities, and so on. They therefore lose the capacity to seek out new economic opportunities and to benefit from them; or even the capacity to adjust to changing conditions, so as to avoid disaster. The founders of the slave economy may have been men of vigour, who created a structure which produced great wealth in the conditions of their time; but their grandchildren are very different, and, as conditions change, the economy steadily decays.

The slave economy suffers also from lack of vertical mobility, and this is particularly damaging because of the effect which slavery has on reducing the will to work of the aristocracy. In a free economy the leading classes, in government, or business, or intellectual life, are constantly refreshing themselves by recruiting into their ranks clever people born in the lower classes. The slave economy deprives itself of this advantage unless it encourages manumission. Some slave societies do make it easy for slaves to buy their freedom, or encourage slave-owners to grant freedom; while others, especially if the supply of slaves is running short, are hostile to manumission. Slave societies differ also in the extent to which descent from slavery is a handicap to freedmen or to their descendants. If the slaves differ in race from their masters, it is difficult for their descendants, even after many generations, to be accepted at the highest social levels. The importance of vertical mobility depends on how numerous the slave-owners are, relatively to the number of leadership positions to be filled. For, if they are sufficiently numerous, they will provide their own layer of classes, with adequate mobility to keep the topmost classes vigorous, though of course the community as a whole will progress less rapidly if it is failing to make the best use of the talents of the great numbers kept in slavery.

Next, if slave labour is abundantly available, there is no incentive to invent or to use labour saving methods, and so we do not get economic growth, defined as growth of output per unit of work,

though of course total output will expand if more work is done. Thus it has been suggested that Greek science in its later phases invented toys rather than useful machines, and that this was because the existence of slavery removed the incentive to use machines. Both suggestions have been disputed. In any case, this line of reasoning does not work in a slave economy run on commercial lines, as were the plantations of the New World. For in those circumstances it pays just as much to economize slave labour as to economize any other cost of production. The incentive to adopt labour saving methods exists in slavery so long as one can sell the extra produce that results, or can consume it oneself, or can sell the slaves whose services are no longer required. These conditions are not fulfilled in economies where the slave-owners already have all the slaves they need for their purposes, or are not operating slavery on strictly commercial lines. The existence of domestic, as distinct from commercial slavery, probably discourages invention. In such societies the slaves, if they were free, might invent or adopt new techniques to ease their labour or increase their surplus; the difference, in slavery, is that new techniques are not adopted merely because they ease the labour or improve the lot of the worker.

Again, a slave society is less flexible than a free society, and is therefore less able to meet changing circumstances. For example a change in circumstances may make it necessary for a community to alter its way of earning a living, the demand for its major export may have altered, or the supply may be affected by the sudden onset of some new plant disease, so that new industries must be started, a new structure of production and distribution evolved, and new skills learnt. At first glance it may seem that the slave economy should be more flexible than the free, since the slave-owners have the legal power to effect large changes by command. The power of the slave-owners, however, is in fact restricted by the traditions which have grown up to regulate their relations with the slaves. For example, the tradition may stipulate that a house slave cannot be sent to work in the fields, or that a slave trained as a carpenter must not be asked to work in a quarry. Precisely because slavery does not rest on contract it comes to rest instead on concepts involving what is fair as between master and slave; it is a status economy, and is accordingly less flexible than an economy based on terminable contracts. Again, flexibility is reduced by the ties between master and slave. In a changing economy different enterprises are affected differently; some should contract, and others expand. If there are good slave markets it is possible for the expanding enterprises to buy slaves from those which are contracting, but this process is hindered by the personal ties between the slaves and their masters, and also by the

fact that since the ownership of slaves carries social and political prestige and privilege, masters are reluctant to part with their slaves. The difference in flexibility is only a difference of degree. All economies are inflexible, and slow to react to changing conditions. There seems however some ground for thinking that a free economy will react more quickly than a slave economy, and if this is so the slave economy is less likely to survive and to grow, if conditions are changing all the time.

On the other hand, to say that slavery is inefficient is not to deny that it may be the only way of developing certain industries in particular places. What we are comparing is the work of free men and of slaves in the same place at the same time. The comparison is not, however, valid if slaves can be made available at that place while free men cannot. The huge sugar industry of the West Indies could not have been developed in the seventeenth and eighteenth centuries without slavery, since free men were not available. And even if free men are available, in the sense that they exist in the country, they may not be available, in the sense of being willing to work in sufficient numbers in the proposed industry, at the wages proposed—particularly if they have all the land they want, and get from it a standard of living which they consider to be sufficient. Slavery is essentially appropriate to conditions of labour scarcity; if labour is plentiful in relation to resources, it is usually cheaper to hire free and willing labour for wages. And even where the scarcity of free labour makes slavery profitable, some types of production are much more appropriate for slavery than others. Because slave labour is unwilling, it is appropriate only where it can be easily supervised. In agriculture, for example, it is appropriate only to those crops which have a relatively high labour requirement per acre, such that a single overseer can keep his eye on a large number of slaves—to sugar, or cotton, or tobacco, or tea, but not to wheat or coffee or cattle ranching. This is also the reason why mines and factories and ships propelled by oars have been associated with slavery even in circumstances where other occupations were left to free labour; the fact that large numbers of persons are concentrated in a small space facilitates supervision in these occupations. Another consequence of the unwillingness of slave labour is that it is inappropriate to occupations where the worker has to exercise a craft skill responsibly. Some domestic slaves, well treated by their masters, have been superb craftsmen. It will often be found that where slaves are practising a craft the master is careful to share the slave's earnings with him on a proportionate basis, or even to allow the slave to keep everything earned over a stipulated sum, so that he shall have an economic incentive to work well at his craft. In general, because slave

labour is inefficient, it cannot compete with free labour except in conditions where free labour is scarce.

To say that slavery is inefficient is also not to deny that a high level of civilization can be erected on this basis. The produce of the slaves can maintain a leisure class, which, as in Ancient Greece, may give itself to philosophy, to sculpture, and to the other liberal arts, and which may paradoxically pioneer in freeing the human spirit and the human mind. Slavery does not always have this effect; the planter civilization in the West Indies was universally despised, and though the culture of the Southern States was at a higher level, in general the riches produced by slavery in the New World were frittered away in luxurious idleness, without contributing to human progress. Moreover, even where slavery is the basis of a vigorous civilization, the benefits of this civilization are narrowly restricted; the slavers benefit, but not the slaves. There are always those who argue that most men are better off if they are well cared for as slaves than they would be if left to their own ill-directed devices; just as some argue that the domestic horse is better off than the wild horse. We need not pursue the argument here, since our interest is not in the desirability of one way of life rather than another, but in the mechanism of economic growth.

It should be noted, finally, that a slave economy, however prosperous it may be for a time, is usually threatened with decline because a slave population usually does not replace itself. A slave economy prospers so long as a cheap source of slaves is available from outside, and it begins to decline as soon as this source is cut off. Slavery flourishes, therefore, so long as there are continuous wars or slave raids, in which large numbers are captured and sold into slavery. But the system declines when peace is established, or the slave trade abolished. This was alike the experience of Rome, whose slave economy began to decline as soon as peace was established on the frontiers, and also of Jamaica, whose decline began not with the abolition of slavery in 1834, but with the abolition of the slave trade nearly thirty years earlier.

The cutting off of the stream of slaves must at once cause the slave population to decline. For, since more men are enslaved than women, even if the women had enough girls to replace themselves (which they do not), the slave population must decline as the surplus men die off. Then after a generation a new equilibrium becomes possible based upon natural reproduction, with male and female numbers roughly equal, but even then the slave population does not reproduce itself.

If we take a country which has had no immigration of slaves for such a long time that all its slaves were born within the country, only about a third of the slave population will be available for work. This

is about the proportion which the West Indian sugar planters reported just before slavery was abolished there. The rest of the slaves are children and mothers looking after their children and their husbands; and there is also usually a large number claiming to be sick or otherwise taking advantage of loopholes which the system has for avoiding work. This low proportion should not occasion surprise when we remember that even in free societies, the 'gainfully occupied', as defined by the census, are usually only thirty-five to forty per cent of the population.

Now, if the slaves were allowed to live together in families, they would have as much chance of replacing themselves as would a free population—possibly more chance, since they might get better medical care, and would probably also work less. Slaves are not, however, usually allowed to live together in families, for this imposes upon the slave-owner the necessity of maintaining two ineffectives for every effective slave. Many slave-owners therefore keep only adult male slaves, who are not encouraged to marry. Women slaves are unpopular; they are not encouraged to have children, and if they do have children they are not allowed enough time to look after them. So the birth rate is low, and infant and child mortality are high; thus the slave population fails to reproduce itself. Naturally the big plantations fare better than the small ones, since it is easier to maintain a proper balance of men, women and children in a large establishment than in a small one. The smaller establishments therefore die out before the larger ones, and, as in the later Roman Empire, inequality increases. But even the big establishments will die out unless they approach the problem of breeding new slaves from its commercial angle.

Exactly the same fate would befall an economy based on the labour of horses if each owner of horses were 'expected to keep horses in the right balance of male and female, adult and child. This does not happen because in a horse economy it pays to specialize in breeding horses for sale. So also a slave economy maintains itself without immigration only if some slave-owners specialize in breeding slaves for sale. This system was adopted in the Southern United States after the abolition of the slave trade, but it is the least popular aspect of slavery, since it involves separating wives and husbands, and children and parents, and denying all the emotional attachments which we consider to be proper to sexual relations between human beings. Slave farms are not therefore usual in slave economies, or if they exist, are usually not numerous enough to cope with the problem of maintaining the supply of slaves. Accordingly, in most slave societies the economy is doomed as soon as the external supply of slaves is cut off.

In this respect serfdom is much superior to slavery, and this is no doubt one of the main reasons why slavery gives place to serfdom when the external source of slaves dries up. Serfs have the right to marry, and they live in this respect much as free men do. Serfs have also usually the right to some free time, and also to some land to cultivate on their own. Some serfs are also on a share-cropping or metayer basis. In the most advanced stage of serfdom, the serf is tied to the soil in the sense that he cannot move to some other place without the lord's permission, but his obligation may be only to pay a fixed rent, and he has then every incentive to produce more than this on his own account. A society based on serfdom can last for centuries, but a society based on slavery must begin to decline as soon as its external source of slaves is extinguished.

(c) *The Family*

The family is such an important social institution that it is not surprising that it raises nearly all the problems we have already discussed. There are questions of incentive, of specialization, of vertical mobility and of access to resources. We shall begin by considering the family so to speak horizontally, that is to say, the relationship between one branch and another; then we shall consider the status of women, and finally we shall come to the generations. We are leaving population problems for Chapter VI.

In primitive society the concept of the family is usually very wide. A man acknowledges ties not only with his parents and his wife and children but also with a wide range of cousins, who may number as many as five hundred. Within this group varying degrees of communism may be practised. Land may be jointly owned and operated, and all members of the family have recognized claims upon the family for subsistence.

It seems to be the case that as a community grows more wealthy, its family concept narrows. The extended family is essentially a means of social security appropriate to a society living on a low subsistence level. At low levels, members of the family must rally round to help those in distress, and the wider the family circle the more effective is the insurance system. As the standard of income rises, however, individuals are better able to save and to provide for themselves against misfortune. There is also greater difference in wealth and income between the various members of the family. Government is better organized and is beginning to assume responsibility for helping the aged or the destitute. And social relations are founded more on the idea of contract than that of status, so that men in wealthier societies are more prone to deny that they have moral obligations to distant relatives. So, in general, the more advanced the society is

materially, the smaller the number of persons whom the income earner will recognize as belonging to his family, in the sense of benefiting automatically from increases in his income, or even in the narrower sense of having some claim on his income if they fall destitute. Family claims are also easier to press in small communities, where everybody knows everybody else and where therefore public opinion may force the richer to help the poorer members of the family. Whereas in the largest communities, where men do not know their next door neighbour one can ignore one's family and live without caring what their friends think about it. This also is related to the average income of the society since the size of towns and villages is related to the wealth of the country.

The extended family system has tremendous advantages in societies living at a subsistence level but it seems not to be appropriate to societies where economic growth is occurring. In such societies it is almost certainly a drag on effort. For growth depends on initiative, and initiative is likely to be stifled if the individual who makes the effort is required to share the reward with many others who claim he does not recognize. Where the extended family exists any member of the family whose income increases may be urged by correspondingly increased demands for support from a large number of distant relatives. This is at any time a deterrent to making superior effort, and it is especially so at time when the family concept is narrowing, and the community is passing from wider to narrower recognition, since it is then that men are least likely to accept claims which they would previously have taken for granted. There are many reports from Asia and from Africa of able men who have refused promotion because the material benefit would accrue mostly to relatives whose moral claims they do not recognize. Or if we look at the matter from the other angle the system is a drag on initiative because it provides everyone with automatic insurance against want, thereby diminishing mobility, thirst and enterprise.

A strong sense of family obligation, even when genuinely felt, may also be a bar to success in other ways. It may cause a man to appoint relatives to jobs for which they are unsuited and it may even happen that others refrain from appointing him to positions which he could well serve, because they know that he will thereupon appoint unsuitable relatives to posts at his command. In primitive societies men fear the effects of witchcraft if they offend their families, and it may be fear, rather than affection, which drives them to nepotism. Sometimes, of course, a member of one's family is the best person to appoint, either because of his talents, or even merely because one is certain of his upbringing and can have confidence in him. But this

is not always so. Another difficulty is that of managing family businesses, where several members are involved. If they have confidence in each other, and each pulls his weight, the family sentiment may be a source of strength; but it is frequently a source of weakness. Often in countries where family ties are strong, the most enterprising and successful individuals are those who have no family obligations, and who are therefore able to stand by themselves.

Against these deficiencies of the family sentiment in business one must set its strength. In societies where men cannot rely on strangers to give faithful service, the family may be the most appropriate unit for large scale enterprise. For example, in some kinds of business it is useful to be able to set up branches in many towns, or suburbs, or countries, e.g. in banking, in the chain store type of retail trade, in wholesale distribution, etc. In these circumstances a family which has many brothers, or closely related cousins, may be at a considerable advantage, since the brothers can trust each other more than they could trust branch managers who were not related, and since, even if there is dishonesty, the money will remain in the family. Or the inter-dependence may be not of branches in the same trade, but of different trades and professions, each brother being able to support the others' businesses to some extent. In much the same way closely knit groups of immigrants or religious minorities can, by putting business in each other's way, and by lending each other support in time of crisis, strengthen the position of the group as a whole, and help its members to make greater economic advancement than they would if their special relationship to each other was not allowed to influence their business. Of course these kinship or other obligations are not specially helpful if the group is not on the average better favoured economically than the rest of the community, and they may even drag the group down if members are below the average in competitive ability, since the more fortunate members will be put at a disadvantage by their obligation to carry the more than average burdens and defections of the rest. On the other hand a talented family may be greatly advantaged by sticking together. When one reads accounts of the early economic development of any community, there are always a few talented families who stand out by the wide range of their activities--whether one thinks of Italian bankers in the fourteenth century or of Indian or Japanese industrialists in the twentieth century. In these early conditions it is possible for a talented family to conduct business on a scale which is not open to any other kind of organization. This advantage is lessened as administrative techniques improve, and as it becomes easier to appoint strangers to managerial positions in fair confidence that they will not simply embezzle the funds.

We turn next to consider the part of women in economic activities. The attitude of men towards women's work varies from community to community. In some communities men try to assure recognition of their social status by withdrawing their women from working; they deliberately keep their wives and daughters idle, and surrounded by servants, to show that they are men of substance. Some of these women do useful unpaid social work; otherwise this form of snobbery lowers the output of women, even though it may raise the output of some men who have to work harder in order to foot the bill. In modern western societies middle and upper class women have had to fight a 'battle' in order to get the right to work. But in many other communities it is men who have lived in relative idleness, while women have had to work very hard, often in cultivating the ground as well as in preparing food and weaving clothes for their husbands.

Restrictions on the work women may do are also everywhere a barrier to economic growth. In some primitive communities women are not allowed to work except within the household or on its farm. This increases the degree of self-sufficiency of each household, and so reduces trade and the opportunities for specialization. It is indeed, very marked that economic growth and a transference of women's work from the household to the market go closely hand in hand. As income per head grows there is an even more rapid growth of such industries as dressmaking, hairdressing and catering, not to speak of the education of the young in schools, which is a substitute for education at home. The association is not to be explained away simply by the refusal of statisticians to include housework in calculating the national income, for there is also a real increase both in the quantity and in the quality of the output, which results from specialization. Growth is restricted if custom requires that women may work only at home; or that if they work outside their homes they may only be domestic servants, or typists, or crowded into some other narrow range of jobs. Often one of the quickest ways of increasing the national output is to open factories offering light jobs of the kind which women do most easily; many communities that are short of male labour have found in this a chance for further expansion. This may increase output not only directly but also indirectly. For example, some farmers, e.g. in Africa, insist on processing badly at home crops which could be processed more efficiently in central factories, because their women folk would have too little to do if the processing were transferred to the factory. Creating more outside jobs for women would thus help to improve the processing of crops. Or, again, in some African communities women spend hours pounding grain by hand. If more paid jobs were available to them outside their households they would soon insist that the grinding of grain should hence-

forth be done mechanically. To create more paid jobs for women is the surest way simultaneously to raise their status, to reduce their drudgery, and to raise the national output.

In some communities the sense of the continuity of the family through the generations is very strong, even, in extreme cases, to the point of ancestor worship. It is arguable whether this is good or bad for economic growth. It has certain advantages. Presumably one acquires a certain sense of confidence from knowing that one belongs to a family which can be traced back through several generations. The family tradition is also emphasized in one's youth, and if this includes some special skill, or adventurousness or character trait, it may be preserved and developed to a greater extent than if family traditions did not exist. Thus the British Navy believes that sons of 'naval families' make better sailors, on the average, than do other recruits, and there may well be professions where the young person who grows up in their atmosphere from birth is better qualified than the person whose parents belong to some other profession. The sense of belonging to a line of generations may also affect one's sense of property. One may feel that one is merely a temporary trustee for what one has inherited, and may be careful to preserve it, and even to improve it through one's own effort and saving.

But there are also disadvantages. Too much looking backwards upon history is bad for a community which has new challenges to meet, different from those which faced its fathers. The traditional patterns may have been excellent for their times, but may be most unsuitable for the present, with its different problems. When a community becomes more conscious of its past than anxious to experiment with its future it is doomed. A strong sense of family tradition also interferes with social mobility. People of 'no family' do not get chances commensurate with their talents, and people of 'good family' but no talent get too much chance of making a mess. Occupational mobility also is diminished if tradition insists that sons must follow in their father's footsteps. The disadvantages of too close a tie between generations show themselves in their extreme form in the caste system, which prevents vertical and social mobility by requiring each individual to follow in his father's footsteps, or else to become a farmer. This is one of the surest ways of preventing change, and therefore economic growth..

When we were analysing the extended family horizontally, we saw it mainly as a drag upon effort, at any rate in so far as men are called upon to meet claims of distant relations for whom they have no affection. When we come, however, to the claims of children upon their parents, we may take it for granted that the family serves to some extent as a spur to greater effort. This spur is at its most effect-

ive when men are ambitious for their families, desiring that their descendants should have a higher social status than that into which they themselves were born.

The desire to raise one's family's social status feeds upon the opportunity to do so. This desire cannot exist in impoverished villages where every farmer lives at subsistence level, since the chance of raising one's material status is small. It cannot exist if legal or customary barriers, caste or colour, prevent men from rising from one class into another. And it cannot mean much in a stagnant or declining economy. Some social mobility is found even in stagnant economies, but the greatest mobility is found where output is growing rapidly. For these are the circumstances in which a middle class grows most rapidly, recruiting people from below to be administrators or technicians or business or professional men. And it is these circumstances which provide the greatest opportunities, whether for making money, or for success in other directions. The desire to 'found a family' is thus strongest and most effective in economies where growth is taking place; it is least felt in stagnant economies. This is just another of the many respects in which the forces which make for growth feed upon each other. Once growth has begun men become more ambitious for their families, and may even adopt family limitation in order to have no more children than they can afford to establish well in life. Then the spread of this outlook itself speeds up the rate of growth.

The concept of founding a family has meaning only in communities where the family is elementary and patrilineal, and not in communities where it is extended or matrilineal. Since what is implied is raising the social status of the next generation above the social status of the present generation, one cannot think in these terms unless one means by the next generation only a few direct descendants and not all the hundreds of cousins who can make claim to family relationship. The extended family is thus ruled out. As for the matrilineal family, it is possible to conceive of a man working very hard in order to make his sister's children rich rather than his own. But the matrilineal family does not survive easily in conditions of rapid economic or other change, since change usually implies mobility, and mobility usually strengthens the conjugal and patrilineal ties. A man who moves takes with him his wife and his children, not his sister and her children, and so the matrilineal ties are weakened in any society where men begin to move about in search of fortune.

It is not clear how important the right to bequeath one's property is as a spur to effort even in elementary patrilineal families. Ambition to found a family varies in different communities, and is not always greatest in those which display the greatest rate of growth. For

example, many rich Americans use their money not to endow their families but to found educational trusts, or for other charitable purposes; a few even deliberately leave little to their sons so as not to spoil their characters. It is probably true that rich Englishmen, when disposing of their wealth, leave a greater proportion to their families, on the average, and a smaller proportion to philanthropic bodies. This is because the institution of the family counts for more in England than it does in the great American cities. All the same, Americans find quite enough spurs to effort in other directions, including their desire to enjoy a high standard of living, and their desire to have power and prestige for themselves.

However, even though the importance of the right to bequeath as a spur cannot be exactly assessed there can be no doubt that it is a spur, and that the restrictions which modern states are increasingly putting upon this right—and especially the high death duties—somewhat diminish the incentive to make a fortune. On the other hand, we must at the same time consider the effect of the inheritance of wealth upon the property inherited, upon the heirs, and upon the rest of the community.

One of the disputed points is the effect of inheritance upon the care of property. The son of the founder of a business or an estate is not necessarily the best person to look after the property. On the contrary, institutions founded on inheritance do not survive as long, or show as much vitality, as those which recruit their leaders afresh in each generation. Some of the vitality of the Roman Catholic Church is no doubt due to the fact that its bishops are made, not born. And the strength of the Ottoman Empire is often traced to the system of Janissaries recruited afresh in each generation. Some people regret that in modern large business corporations the family connection is often small, but it may well be a source of strength that business corporations increasingly recruit their leaders without reference to family connections. On the other hand, the system by which property passes automatically to the next generation has also its advantages; it is more certain, it therefore permits the successor to be trained in anticipation, and it is simple.

The effect of inheritance depends also on whether property passes exclusively to the eldest son, or on how it is divided up between the members of the family. Primogeniture keeps the property intact, and this is specially important where there are economies of scale, or in those farming communities where holdings are already so small that further fragmentation would be uneconomic; but the point is not so important if it is possible for the property to be operated jointly by the heirs without subdivision. On the other hand, primogeniture helps to maintain an unequal distribution of property, and may also

be unfair to the rest of the family. The eldest son is also not always the most competent son, and this is recognized in systems (political more usually than economic) where the heir is not the eldest son but the son designated for the purpose. Some economists have argued for primogeniture on the ground that the system forces younger sons to be industrious; and others on the ground that by driving younger sons of the nobility down into the middle class it prevents the classes from despising each other, and thus assures greater social cohesion and mobility; but if these arguments were pushed to their logical conclusions, they would support the abolition of property inheritance altogether.

Against the incentive which the right to bequeath is to the maker of the fortune we must also set the extent to which the effort of the heirs is diminished. Heirs are sometimes inspired by the example of their forefathers; and may treat their inheritance as a trust which they are challenged not only to maintain but also to increase. But they more often react in the opposite way. Taking them on the average, heirs would almost certainly lead more useful lives if their inheritances did not shield them from the necessity for hard work.

The inheritance of property also diminishes vertical mobility and enterprise. This can be seen very clearly in those agricultural communities where all the land belongs to a few families, and where all the remaining families are condemned from one generation to another to remain at the bottom of the social scale. The effect of the inheritance of property is that each generation starts with the dice loaded heavily in favour of a few of its members, whose own abilities are not necessarily superior, and are often not as well cultivated because inheritance removes the need to make the best use of one's talents. There would probably be greater economic growth in a community where all started equal, and greater growth still in a community where the dice were loaded deliberately in favour of those with superior talents.

(d) The Organization of Agriculture

The laws and customs governing the ownership and use of land are of the greatest economic importance, especially in the poorer communities, where agriculture is the principal form of activity. At the same time, land plays a large part in determining political and social status, and so the rules and customs are seldom framed with economic considerations primarily in view. From the point of view of economic growth, we are interested in the tenure of agricultural land, in the size of farms, and in the relationship between these matters and incentives, capital formation, and technical innovation.

Take first the question of communal tenure of land. This term is

used in three distinct senses. The first sense, in which it is used here, is the case where several people have the right to use the same piece of land, each on his own account—e.g. to pasture his cattle upon it, or to cut firewood. This is to be distinguished from the second sense, where people work together on the same land, under a single authority, and pool the proceeds. This is co-operative or collective farming; we have discussed its main problems earlier in this chapter (section 1(c)), and shall revert to them at the end of this sub-section. Thirdly, there is the case where each person has a right to exclusive use of a particular piece of land, but where his rights to dispose of the land are restricted on the theory that the land belongs to the chief or to the tribe. Since the use and disposal of land is subject to restriction in practically every community, the differences between 'communal' tenure in this sense and 'freehold' tenure are differences only of degree. If we treat as 'individual' tenure (using the word individual to represent the family) all those cases where the individual has exclusive *use* of the land, then individual tenure of land may be said to be almost universal outside Soviet Russia, and what we have to say will relate mainly to this form of tenure. But first we must say a word about communal tenure in the first sense distinguished above, where there is communal use without collective management or pooling of the proceeds.

There can be no doubt as to the superiority of individual over communal tenure. This shows itself in its effects both on investment and on innovation. If large numbers of people are free to use the same piece of land, each for his own purposes, each has an incentive to take what he can out of the land without putting anything back. In these conditions, as soon as land begins to be scarce, it begins also to deteriorate through over-cropping, or excessive pasturage, or failure to take appropriate measures for soil conservation. It pays no individual to invest in improving the land, in fertilizers, in drainage, or in improved grasses. Trees will be planted if the rights of individuals to their fruit is recognized, as it usually is, but trees will not be planted for general purposes, such as for shade or for afforestation. Communal tenures worked passably in Africa so long as populations were very small in relation to land, but population pressure everywhere causes such tenures to destroy the land. Investment apart, communal tenure is a handicap to innovation. Livestock cannot be bred selectively unless they are segregated and their mating controlled; neither is it convenient to experiment with new agricultural methods in circumstances where communal activity imposes its own routines. These are the reasons why communal tenures are disappearing rapidly in places where they flourished fifty years ago. Many people regret their passing for sentimental reasons, but there is no reason to doubt their incompatibility with economic development.

When we turn to individual tenure, we find that throughout most of recorded history most farmers have held their land under a contract of tenancy. We begin therefore with the tenant's relationship with his landlord, which involves questions of compensation for displacement, of rights of tenure, and of the form and amount of rent to be paid.

The need for compensation arises out of the principle that the tenant must be assured the produce of his effort. If the tenant is to make any investment in the land he must be assured that in case of dispossession he will be compensated for all improvements he has made whose benefit is not yet exhausted. Otherwise he will not plant trees, or construct substantial buildings, or make improvements in drainage, or effect any other investment. The corollary of such protection is that the landlord must give his prior assent to improvements for which protection is claimed. In most advanced countries the law ensures this protection, but in primitive countries such provision is the exception rather than the rule, with the effect that tenants are careful not to invest in improving the land, and will even permit it to lose fertility, if the landlord allows them to get away with this.

Many countries are not content to protect unexhausted improvements; they also give legal security of tenure. At the least they prescribe minimum periods of notice, while in more extreme cases the law gives the tenant a right to remain on the land so long as he maintains good husbandry (e.g. in the United Kingdom), and may even ensure to his heir a right of succeeding to the tenancy, if reasonably competent. The way such legislation works depends very much upon the complexion of the tribunals established to administer it; in 'democratic' countries it becomes almost impossible to get rid even of a bad tenant, unless he is obviously ruining the land, whereas in 'reactionary' countries the law is operated to afford little protection even to the best tenants. The point of such legislation is to give tenants sufficient security to justify their investing in long-term improvements. There is also an argument against giving too much security, based upon the desire to ensure mobility of land, but we shall take this up later when we discuss freehold tenure by farmers, to which it also applies.

By the form of the rent we mean whether it is a fixed or a proportional payment. A fixed payment may bear heavily on small farmers in years when conditions are bad, even if the rent is quite bearable when good and bad years are taken together. The rent may be fixed in money or in kind. A rent fixed in kind bears more heavily if bad conditions are due to poor harvests, and a rent fixed in money bears more heavily if bad conditions are due to low prices; since farmers suffer from both, there is not much to choose between money rents

and rents in kind, except in time of war, when farmers whose rents are fixed in money gain handsomely, at least for the time being. If we take the world as a whole, however, most rents are not fixed, but proportional, the farmer paying the landlord a proportion of his crop (or receipts) which may vary from one quarter to one half, according to the scarcity of land.

Proportional rents are popular with poor farmers because they are less burdensome than fixed rents when conditions are bad. They also give more to the landlord when conditions are good—but one can afford to give him more then, and in any case the amount evens out over good and bad years. Proportional rents, however, are usually attacked by economists because they lessen the incentive of the farmer to adopt improvements. For a given improvement to be worth while at the margin to the farmer it must yield twice as much if the rent is one half as it would have to yield if the rent were a fixed amount. This pre-supposes that the farmer bears all the cost of the improvement. In more advanced systems of metayage or sharecropping (as proportional rents are called), the landlord bears part of the cost of improvements; or the contract provides that the rent is to be adjusted if the tenant undertakes improvements. But in less advanced countries there is usually no such provision, and the system of proportional rents certainly diminishes the farmers' incentive to adopt improvements.

The amount of the rent is in most countries a source of great complaint and agitation. What the landlord gives in return varies from country to country. In England the contract usually imposes upon the landlord the duty to provide the permanent buildings, and to maintain the fixed capital: it may even require him to provide some of the working capital as well. At one time English rents were high enough to compensate the landlord for the cost of these duties, and also to leave him a surplus, which was the 'pure' rent due to the scarcity of good land, but in these days rents are so low that there is seldom any surplus above the cost of maintaining the fixed capital of the farm. At the other extreme we find that in most primitive countries the landlord has no duties whatever to the land; he merely collects rents. He may of course perform some social functions—he may be the equivalent of a magistrate, or a policeman, or a district administrator, or a priest—and if he were not remunerated out of rents, he or someone else might have to be remunerated out of taxes or in some other way. But as far as the land is concerned, its productive capacity would not be reduced if the rent were kept by the farmer (i.e. if the landlords were 'liquidated' and the land passed into the freehold ownership of the farmers), or if the rent were paid instead to the state (the state often collects a rent anyway in the form

of direct taxes levied on the land or on the farmer). Indeed, if rents were reduced, or abolished, the productive capacity of the land might be increased, since the farmer could now afford to save more, and to invest more in the improvement of the land. In those countries where landlords take fifty per cent of the farmers' output and do nothing for them in return, it is hard to believe that agricultural productivity would not be greatly increased if this *incubus* were removed from the farmers' backs.

In many countries there is a demand that landlordism be abolished altogether, and that farmers should own the land they work. This demand should not be confused with other demands for altering the size of farms. Some reformers want to increase the number of farms, by breaking up large estates and distributing the land as small farms; others wish to do the opposite, namely to reduce the number of small farms, by persuading or compelling the farmers to join collective farms. We shall discuss later problems of size. Our present concern is simply with freehold ownership on the one hand, as against tenancy on the other. Though much of the demand for land reform is associated with demands for changing the number of farms, there is also, especially in Asia, a considerable land reform movement which is confined to a demand for abolishing landlords and converting tenancy into ownership.

The effects of this conversion depend to some extent on the payment terms on which it is done; on the amount of compensation received by the landlords, and on the size of the payments which the farmers are required to make for the land which they now acquire. Apart from the question of compensation, however, there are many other issues involved in comparing tenancy and ownership. In fact, many people argue that a system of peasant ownership of land is not in the interest of economic growth. They consider that it reduces the mobility of land, and that it is associated with bad husbandry, with fragmentation and with excessive indebtedness. They therefore prefer that small farmers should be tenants only, and should be subject to controls, whether the landlord be a private owner, or a government agency. In fact, as we shall see, most of the desired controls can be exercised just as well over owners as over tenants: in fact, if controls are adequately applied, on the one hand to give the tenant security, or on the other hand to enforce good husbandry upon the proprietor, the economic distinctions between tenancy and ownership largely disappear.

Let us begin with the mobility of land. As we saw earlier, some people object to legislation giving security of tenure to tenants whose husbandry is good on the ground that this makes the agricultural economy less flexible. They argue that the landlord, who is presumed

to be interested in seeing the land put to its most profitable use, should be able to change tenants freely as conditions change. Conditions may make it desirable to change from arable to livestock; or to alter the size of the farming unit; or for some other reason to change over to a new tenant more capable of coping with the new situation, and this may be frustrated if the sitting tenant is protected. For the same reason the same people object to freehold tenure of land by small farmers, because they believe that such farmers are slow to react to changing conditions, and believe that response would be quicker if landlords could bring it about by changing tenants. The argument depends for its validity first of all on the assumption that landlords are keen and knowledgeable agriculturists, always looking out for better ways of using the land, and while this may be true of some, it is probably true of most that they are absentees knowing not much more about the land than the amount of rent it yields. And, in any case, the argument could be extended to say that no one should ever own the resource he uses, since resources are more likely to move into the hands most capable of using them if the resources are owned by people who specialize in moving them from hirer to hirer at short notice. One should not even own one's house, presumably, since there is always someone else who could make better use of it. The answer is surely that the owner is always open to receive offers. If someone else thinks he can make better use of the resource, let him offer an attractive price for it. Our experience is, indeed, that land changes hands much more easily if the ownership of land is widely diffused than if land is owned by a few powerful families who regard it as a source of political power and of prestige rather than just as a source of income. Easy access to land requires wide distribution of land ownership.

There is more substance in the claim that freehold owners may exhaust the soil if not controlled. In many parts of the world small farmers are engaged in practices which impoverish the soil. This is not usual in those parts of Asia which have been so thickly populated for so many centuries that the farmers have an acute sense of the importance of soil fertility. But it is common in places where the transition is being made from abundance of land to scarcity of land, especially in North America and in Africa, and where the farmers have not yet been forced into permanent settlement on the same area of land, with the maintenance of soil fertility as a prime condition of existence. In these conditions reformers are particularly keen to be able to control the farmers' practices, especially with regard to soil conservation, and to crop rotations and fallows. They are aware that the landlord exercises such controls in the more advanced leasehold systems, and they therefore hanker after such systems. It is doubtful how far it is

desirable to try to improve farming practices by compulsion rather than by education. But, in so far as it is practicable it can be done as well by law as by trying to introduce a highly advanced type of leasehold contract into conditions to which it is foreign. Bad farming can be made an offence, punishable by fine or by dispossession, and agricultural officers, or tribunals, can be established in each district to lay down standards and to try cases, much as the landlord would do, but with greater knowledge (in most cases) and impartiality. Also good farmers can be rewarded, e.g. with prizes or with bonuses.

Fragmentation results usually from a system of inheritance which allows each of the farmers' sons (or daughters) to receive a piece of the farm when the farmer dies. To ensure fairness when the farm is being broken up, each son receives several pieces, such as a piece near the river and a piece far from the river, a fertile piece and a piece useful only for grazing, a wooded piece and a barren piece. After this has gone on for some generations each farmer's holding of land is in several small pieces, which may be widely distant from each other. Fragmentation causes waste in several ways. A lot of labour time is wasted in travelling from one plot to another. Secondly, distant plots cannot be supervised as easily as the nearer plots; they may therefore be less productive because of greater liability to disease, or less care, or greater liability to theft, and because they are less productive may receive still less care. Thirdly it may be necessary to duplicate capital on some of the holdings, e.g. equipment, or cattle stalls, or water troughs, because of the distances between the holdings. And fourthly if the plots are very small it may be difficult to work them with ploughs, difficult to protect them from one's neighbours' weeds, difficult to make experiments which one's neighbours distrust, and impracticable to provide space for wells, buildings, or other capital. Much land may also be wasted in boundaries. The major loss, however, is in time. Hence, where labour time is scarce, the farmers are glad to effect an exchange of pieces, which consolidates each farmer's holding into a single piece. Many countries have passed legislation to effect such transfers compulsorily in areas where a majority of farmers indicate their desire for consolidation. On the other hand, if labour time is abundant, as in over-populated countries, consolidation adds much less to output, and the farmers are usually unwilling to bother with a consolidation scheme.

It is possible to prevent fragmentation without resorting to leasehold tenure. Fragmentation does not occur under a system of primogeniture. But even without primogeniture fragmentation does not occur if it is the practice for the heirs to administer their inheritance jointly, and without breaking up the unit. It is no more difficult to administer a farm jointly than it is to administer a shop, or a manu-

factoring business, or any other inheritance which it would be uneconomic or even impossible to break up into pieces. If fragmentation is taking place, and is causing significant waste, a law can be passed to prevent agricultural land from being broken up into units of less than a stipulated minimum size (say five acres), without the permission of an agricultural tribunal constituted for the purpose. In this, as in other matters, if it is desirable to restrict the farmer's rights over his land, this can be done by establishing impartial tribunals, and without resort to landlordism.

Debt affects output adversely when it is so heavy that the farmer is virtually working for the moneylender. There are many countries where the farmers are so heavily in debt that they cannot afford to make the annual interest payment and repayment of principal which are due. The moneylender then takes from the farmer whatever the farmer produces, less the bare subsistence needed by the farmer. Farmers in this position have no interest in adopting improved practices, for the whole or most of the benefit would go to the money-lender. When this situation becomes widespread, as it often has, the government may have to step in and reduce the debts within manageable limits, in order to give the farmer some incentive. Many countries have established tribunals for this purpose. It is not enough, however, merely to reduce the debt, if the farmer will promptly get himself back into his previous thraldom. Small farmers have a very high propensity to get into burdensome debt. This is mainly due to the risks to which they are subject-- of flood, drought, low prices, epidemic disease, and whatnot. It is also partly due to their own improvidence, but it is often just as much due to the deliberate policy of the money-lender. If the farmer owes more than he can pay, he is ripe for exploitation: the moneylender may compel him to sell all his marketable produce through the moneylender's agents, or to buy all his requirements in the moneylender's shop, in either case at unsavourable prices. Or the moneylender may drive the farmers bankrupt, buy their land cheaply, and take extortionate rents. To some extent, therefore, farmers get into debt because moneylenders deliberately make it easy to get into debt, so as to exploit them, and a government may well think it necessary to take counter measures to prevent the farmers from getting into debt.

The only way to prevent small farmers from getting excessively into debt is to make it difficult to borrow, by denying the protection of the law to the security on which farmers would otherwise borrow. Thus, in several countries a farmer's land cannot be sold for debt; it is thus not a marketable security, and moneylenders will not advance money on it. Other countries will not give legal recognition to crop liens; for example, in Uganda the law says that an

African's cotton must be sold in a licensed market, at not less than the price stipulated by the market authorities, and that cash for the full amount must pass from the buyer to the seller at the time of the transaction—provisions which make it dangerous to advance money to a farmer, unless you can stand over him on market day, and extract the cash from him as he sells his cotton. The Bechuanaland Protectorate goes even further; the courts will not enforce shopkeepers' debts against Africans—so the shopkeepers do not get African farmers into debt.

It is not enough, however, to prevent the farmers from borrowing from moneylenders, since farmers have legitimate needs for loans. If the private moneylender is going to be excluded, it is necessary that other institutions be created to meet legitimate needs. Actually, the farmer probably needs insurance, even more than loans. Much debt is due to misfortunes of a statistically foreseeable nature—to sickness, or the cost of a wedding or a funeral, or fire, drought or hurricane, or accident to livestock. Such events happen regularly, and are not really suitable for loans, since if a poor farmer has to borrow to pay off the cost of an illness, or to replace crops lost in a hurricane, it is most unlikely that he will be able to save enough out of future harvests to be able to pay off the debt. All such statistically foreseeable events should be covered by insurance. The obstacle to this is the cost of insuring large numbers of people for small sums of money. Some governments of under-developed countries are nevertheless starting compulsory insurance schemes, e.g. hurricane insurance in Jamaica. Where the farmers to be insured are all liable to much the same risks, the cost of administering the insurance is minimized by raising the revenue out of general taxes on farmers, instead of making an individual assessment of each farmer.

Besides insurance, the farmer also needs credit. The cost of lending to small farmers has been greatly reduced by the invention of the village co-operative society. The cost of lending lies in the cost of acquiring information about the borrower's credit status, in the cost of collecting instalments, and in the cost of keeping an eye on his movements. If a commercial bank were lending money to farmers, in sums of fifty pounds or less, these costs might easily amount to the equivalent of a rate of interest of twenty per cent per annum. To the members of the village, however, these costs are very small; they have known the borrower and his character all his life, and he lives among them so that they are able to follow all his fortunes—which they do anyway for their own pleasure, whether he borrows money or not; hence village societies are able to lend at a cost of five to eight per cent above the rate at which they borrow. Such societies need to be small: a unit such that every member knows every other, or else

the main advantage, of costless information, is lost. And they also usually need some supervision by government officers, since the members have usually inadequate experience of running the affairs of an organization and looking after its money. Moreover, the society runs with the least bad debts when it is tied in with the agency which markets the farmer's crop; for arrears and bad debts are avoided when the sums due from the farmer can be debited automatically against his crop.

Co-operative credit societies have had great success in most of the under-developed countries of the world. Their emphasis, however, has primarily been upon encouraging small farmers to save, and providing a cheap banking mechanism. Farmers, however, need much more capital than they can afford to save. If funds can be obtained, whether from taxing the farmers themselves or from other sectors of the economy, or from external sources, the co-operative credit society is an excellent channel through which to make them available to small farmers. There is a world of difference between the attitude of farmers who are heavily indebted to moneylenders, and that of farmers whose debt is kept within manageable limits by a credit system which they help to manage for themselves.

We come now to the question of the scale of farming operations. This question is much debated by land reformers. There are countries where large estates, worked by paid labour under direction, are being broken up, and converted into small farms. And there are other countries where the small farmers are being compelled to join their lands together to form big estates, operated as collectives.

Large scale agricultural operations are more efficient, and show more rapid economic growth than small scale operations, if there is economy in mechanical cultivation, or in large scale control of irrigation, of seeds, of disease precautions, of processing, or of marketing. There is almost always some difference in favour of large size—interpreting this to mean say units of not less than 300 acres of arable land or its equivalent (beyond say 1,000 arable acres the diseconomies of management soon show up)—but the extent of the difference depends partly upon the nature of the crop and the land, and partly upon the amount of effort which is made to organize around the small scale farmer services which maintain his efficiency.

Let us deal first with mechanical cultivation. In the first place, mechanical cultivation is not economic unless there is a shortage of labour relatively to capital. If labour is super-abundant, as it is in India or in China, the main effect of introducing mechanization is to create still more unemployment, at the cost of using up scarce foreign exchange to import the mechanical equipment and its fuel. In such a situation the objective of economic policy is to maximize

output per acre, and not output per worker. Mechanization will increase output if it enables land to be brought into cultivation which could not be cultivated by hand methods, because the soil is too heavy, or because weather or climate leave too little time to get the work done by hand. This is a valuable contribution, but apart from this it is more usually the case that hand cultivation is more productive per acre than mechanical cultivation because it is done with greater care. Mechanical cultivation is also economic in surplus labour countries in so far as it releases for human use land which is otherwise required for feeding draught animals; this depends on the cost of machinery and fuel on the one hand (which probably have also to be imported) and on the value of the crop released in this way on the other hand. It also depends on whether the peasants would in fact keep fewer animals if they were no longer required for work. It is difficult to be certain how this calculation would work out for China, but it seems fairly clear that in India, where cattle play also a religious role, mechanization should at present be only marginal to agricultural policy. The reverse is the case where land is super-abundant, as in some parts of West Africa. Here the objective of policy should be to maximize net output per worker, and not per acre. In general, economic growth creates new demands for labour outside agriculture, and reduces the proportion of the population which can be spared for agriculture. Mechanization simultaneously reduces the demand for labour in agriculture, and increases output per worker, by enabling each worker to cultivate more acres. It is a necessary part of economic growth where labour is scarce, but is only marginally relevant where labour is abundant.

Given that the relative scarcities of labour, land, and capital are such as to justify mechanization, the feasibility of mechanization depends next upon the land and the crop. Mechanical cultivation is appropriate if the land is flat, is used for annual crops, and is not easily leached. Hilly land is not suitable for mechanical cultivation, and might from this point of view just as well be in the hands of small farmers. Land planted permanently to grass, or to trees, also does not require mechanical cultivation. There is also doubt about the wisdom of mechanical cultivation in countries which are subject to extremes of heat or of rainfall. These qualifications restrict the area to which mechanical cultivation applies. In this area there is advantage in having farms of such a size that it pays the farmer to keep mechanical equipment; that is to say, it seems that in arable cultivation in temperate climates farms of less than 100 acres are at a disadvantage, and arable farms of 300 or 400 acres are often the most economic in Western Europe.

Mechanical cultivation can in any case be combined with small

farming if the machinery is owned by a central agency which cultivates the land for the farmers in return for a fee, while leaving each farmer to plant, weed and reap on his own account; the performance of mechanical operations by central machinery owning agencies has been successful in many parts of the world. The condition for success is that the farms be neither too small nor too big, say between twelve and fifty acres. For if they are too small, the machine does most of the work that the farmer would otherwise do for himself, and it is cheaper for him to do the operations for himself than to pay for the machine. While if the farm is large enough, there is enough work to justify the farmer in having his own machines. It is particularly convenient for the farm to have its own machines available just when it wants them, instead of having to wait in a queue. This has been one of the major obstacles to the success of co-operative ownership of machinery by farmers: the difficulty the farmers have in agreeing on who gets the machinery when— a difficulty which is perhaps more acute in countries where the weather is changeable and unreliable, as in Western Europe, than it is in some other parts of the world. Many governments have taken the initiative in organizing machinery pools under government or co-operative ownership, or in encouraging private entrepreneurs or large farms with surplus machinery to provide small farmers with machinery service, in return for a fee. These schemes have had reasonable success, in areas where the farms are of appropriate size; but the cost of cultivating a large fertile plain mechanically is almost always lower if the plain is operated in farms large enough to own their own machinery, than if it is split up into small farms, however efficiently one may try to organize the operations of a central machinery agency.

Much the same sort of analysis applies to marketing operations, though it is in practice much easier to disintegrate marketing than to disintegrate mechanical operations. For there are always middlemen willing to buy produce from the farmer in small quantities, and to bulk the produce of several farms in order to perform such processing or marketing operations as are most economically performed on a large scale. However, though middlemen are always available, their services are everywhere complained against, and investigated, on the grounds that they are inefficient, or too numerous or monopolistic. Inefficient service, where it exists, can usually be prevented by a system of inspection, such as is involved in compulsory grading. Excessive numbers result usually from imperfect competition, excessive numbers may be able to make a living under the shelter of a minimum margin, which they agree tacitly or openly not to undercut; or again excessive numbers may survive if each has his own area—his particular group of farmers tied to him by debt, or by sentiment, or by zoning

regulations enforced by law. The simplest remedy in this situation is usually the enforcement of competition—by cleaning up the debt situation, or by ending the zoning, or by prohibiting price and market sharing arrangements. But there are also cases where monopolistic organization is genuinely more efficient than the competition of many small middlemen, as for instance where processing is most economically done in large factories. Here the remedy lies in co-operative marketing, or in price and profit controls on private middlemen, or in state marketing agencies.

The success of co-operative marketing depends upon the quality of the private entrepreneurship with which it competes. The co-operative is sometimes able to sell a better product than the middlemen do, but this is only if the middlemen are unusually inefficient in arranging the bulking and grading of the crop, or in offering adequately differentiated prices for superior grades. This in turn would probably be a sign of lack of competition amongst them. Conditions are most favourable to the success of co-operatives if lack of competition between middlemen is causing them to be inefficient, or to be excessively numerous, or to take too high a margin; for if the middlemen are efficient and competitive they can usually outbid the co-operative organization because of their greater flexibility. This is not to say that co-operatives must succeed in monopolistic conditions. In such conditions the middlemen may 'gang up' against them and use all the usual tricks of would be monopolists—the price war, exclusive dealing arrangements, and so on; and the co-operatives may not be able to survive these tricks unless their members are men of sufficient education and substance to be able to hold on. Or the scale on which the marketing has to be done may be beyond the control of co-operatives, small farmers can run a small cotton ginnery for themselves, but it is not easy for them to run a large modern rice mill or sugar factory as a co-operative. This is why co-operative marketing has succeeded best of all among farmers operating on a fair scale—say farms of thirty acres or more. When the farmers are on the three to twenty acre level, the range of what they can co-operatively do is limited—eggs, milk, and a few other crops not requiring elaborate processing. Outside that range their protection from monopolistic practices among middlemen rests either on legal controls or upon the creation of statutory marketing agencies.

Other operations can also be disintegrated, besides mechanical cultivation, and marketing, with greater or less success. Irrigation can be controlled by a separate water agency. Seed control is harder to effect, but can be ensured if a co-operative or state agency maintains pure seed farms, and if the farmers are persuaded or compelled (as they are e.g. in Uganda) to plant only seeds supplied by

these farms. Precautions against infectious diseases of plants and animals are harder still; but these also can be enforced by law or by persuasion. It is too much to expect the small farm to be as efficient as the large, but it can hold its own provided that it is buttressed by a network of other agencies, responsible for machinery, or seeds, or credit, or water, or marketing, or control of infectious diseases, or research, or whatever else it may be that needs to be done on a large scale: merely to recite the network is to explain why small farmers are not competitive in many fields of agriculture, since there are so many fields where the necessary network is simply not provided. And even where the network is provided, the small farm is almost certain to be slower in adopting improved techniques than is the well run estate. Some estates are run badly, especially if they have been in the same family for generations, and are regarded as a mark of status rather than as commercial enterprises. But the well run estate will adopt new types of crop, or livestock or fertilizers or disease controls in a fraction of the time which it takes to persuade or bludgeon small farmers into widespread acceptance.

This analysis so far has thrown up the weaknesses of small scale agriculture, but there are also some substantial points in its favour which in appropriate circumstances make it more efficient than large scale agriculture, even on the economic tests.

First comes the fact that small farmers cultivate the land more intensively than large farmers. There are a number of cases where product per acre is higher on the large farms, e.g. sugar; especially where new varieties, new methods or new fertilizers are being adopted more rapidly by the larger farmers. But there are also many other cases where product per acre is higher on the smaller farms, mainly because the small farmer, having a small area to handle, cultivates it more intensively. This is almost universally the case in European agriculture, and similar results are reported from other continents. If labour is much more scarce than land, the object of policy is to use a system which maximizes output per head, rather than output per acre, so full employment industrial countries which are in a position to import food cheaply are better served by large scale agriculture, using machines, and maximizing output per man, than by small scale agriculture with its low output per man and high output per acre. On the other hand, in those Asian economies where labour is abundant, small scale agriculture has the advantage of using most intensively what is most scarce, namely land. A good deal of emphasis in the land reform movements, whether in Latin America or in Asia, is upon the more intensive use of land which would result if some of the large estates were broken up and converted to small family farms.

Next, the family size farm has over large scale farming the advantage that the farmer works harder and more carefully than the hired agricultural worker. As Arthur Young said, after observing the operations of the French peasantry 'the magic of property turns sand into gold'. This may appear to conflict with what we have said earlier on the danger of peasants impoverishing their soils, but as we pointed out there, this danger is found only in places which are in transition from abundance to scarcity of land. In countries where land has been scarce for many centuries, e.g. in China or Java or for that matter in part of Africa, the farmers have learnt to treat their soil lovingly, and to maintain its fertility. The superiority of peasant farmers' work over hired labourers' work is greatest in types of agriculture which are not labour intensive, since types which use a great amount of labour per acre can afford to pay for adequate supervision (this difference is much the same as the difference between free and slave labour to which we referred in an earlier part of this chapter).

This brings us to the third advantage of small scale farming which is that it does not make large demands upon supervisory staff. If such staff is available, and can be used in an agricultural extension service it will yield plentiful results, but if such staff is difficult to recruit and expensive, as is the case in most under developed countries, peasant agriculture can get along with whatever is available. This is not the case with large scale agriculture whose efficiency stands or falls by the quality of its management. The managerial problem is so severe that it puts sharp limits upon the economic size of the farm though, as we have said, a European farm of 300 arable acres is more efficient than one of forty acres, a farm of 1,000 arable acres is not noticeably more efficient than one of 300 acres, and efficiency may fall sharply as size rises beyond these limits. Most of the attempts to establish giant farms, whether to grow grain in Russia, or to grow groundnuts in Tanganyika, have failed for this simple reason. In countries where superior agricultural skills are scarce it is often more effective to use what there is in schemes for improving peasant production than to use it for launching new large scale agricultural enterprises.

Beyond these economic considerations lie also social considerations which would make many people prefer the family size farm even if larger operations could be proved to be more economic. As we have seen in an earlier section, large scale enterprise tends to bring with it disputes between employer and employed; moreover, land ownership carries with it such political and social prestige or power that the concentration of land ownership in a few hands is deplored by most people. There is a school which sees the way out of

these difficulties in collective ownership of the land, either by the state, or by farmers' co-operative societies. We have already discussed these forms of organization in section 1(c) of this chapter. State farms exist in some countries, but the substitution of the state for the private employer has not noticeably diminished industrial disputes. Collective farming, if run on a democratic basis by the farmers themselves, has greater attractions as a social form, but large scale co-operative enterprises run by the workers themselves have seldom been successful in history, for reasons which we have already seen. There is everything to be said for persuading small groups of farmers to experiment in collective management, and if the groups are kept small—to say not more than five or six families—many of them will prove successful. But it seems improbable that there is much future in democratic countries for large collective farms involving whole villages of say a hundred families or more.

The desire to combine individual enterprise with large scale efficiency has led to experiments in tenures involving some forms of compulsion. In the classical example, which is the Gezira cotton plantations in the Sudan, the land is split into small units which each farmer cultivates on his own account, but the farmer is subjected to various controls. His land is ploughed for him mechanically, he has to plant the seed he is given in the rotations he is told, to fertilize and cultivate as recommended, and to hand over the crop for processing and marketing by the central agency which runs the scheme. The case for compulsion is that it ensures ever increasing efficiency, whereas if the services offered by the agency were voluntary many farmers would plant inferior seeds or would cultivate or market in ways which forfeited the advantages of large scale organization. Compulsion combines the advantages of plantation size with the advantages of family size, on the other hand it does this only by partly reducing the status of the cultivator from that of independent farmer towards that of labourer acting under orders.

Gezira is only the extreme case of a range. It is not unusual for farmers to hold their land on condition that they observe certain covenants. Probably the best line of approach in countries based on peasant agriculture is to begin by offering a network of voluntary services, and to convert such services from a voluntary to a compulsory basis (compulsory use of improved seeds, compulsory collective marketing, compulsory soil conservation) only when the majority of the farmers having grown used to the central agencies the coercion of the dissident minority is possible without alienating general farm support.

So much emphasis is laid in contemporary literature upon ques-

tions of agricultural organization that it may be as well to end upon a dissenting note. It is of the greatest importance everywhere that farmers should hold their lands on terms which give them security and incentive, and it is also of the greatest importance to have adequate institutions for making capital available. These questions apart, far too much emphasis is placed in current discussion on other institutional matters—especially fragmentation, size and marketing—and much too little upon other means of increasing efficiency—especially water supplies, seed farms for improved seed, fertilizers, and agricultural extension services. One gets the impression from much of the discussion that not much can be done to increase agricultural productivity without vast institutional changes in the countryside. This is not so. The typical farm in Japan is still only between two and three acres in size; nevertheless productivity per acre on these farms is two to three times as great as in other parts of Asia. Productivity per acre in Japan increased by nearly fifty per cent in the thirty years before the first World War, and had doubled by the middle 1930's, without significant changes in the size of farm. The secret of rapid agricultural progress in the under-developed countries is to be found much more in agricultural extension, in fertilizers, in new seeds, in pesticides and in water supplies than in altering the size of the farm, in introducing machinery, or in getting rid of middlemen in the marketing process. (In any case increasing farm size and introducing machinery are doubtful policies for overpopulated countries.) The present institutional framework is in most under-developed countries (but not all) quite adequate for an enormous advance in productivity by means of the introduction of improved technology. Indeed the best hope of raising the standard of living in most of these countries lies in the fact that the backwardness of their agricultural techniques makes possible spectacular advances in production at relatively low cost. We shall come to these matters in Chapter IV.

(e) *Cottage Industry*

Every community has some part of its population specializing in producing manufactured articles as independent producers. The proportion seldom falls below five per cent, even in the poorest economies, unless the economy becomes very dependent on foreign trade. These craftsmen are engaged first and foremost in making cloth, which is everywhere man's next requirement after food; and there may also be workers in wood, in leather, in metal, in raffia, in clay, and in such other materials as are available. Some of the work may be of exquisite craftsmanship, for use by princes or by rich men, but most of it is just ordinary work for ordinary people.

In Western Europe, where the industrial system began, the factory system sometimes grew out of cottage industry. The crafts sometimes provided a reservoir of skill. And the domestic or 'putting-out' system was sometimes a stage between the individual's workshop and the factory. This was not always so. For sometimes the factory was based upon a machine which rendered the old skills obsolete. And sometimes its owners deliberately looked for labour in places where they could avoid the high wages or the restrictive practices associated with the craft. There is no necessary evolution from workshop to factory. The new as often challenges the old, and destroys it altogether.

Many people are anxious to preserve the independent craftsman from destruction by the modern factory for the same reasons that they prefer small scale proprietorship to large scale systems of farming. Looking at the matter in economic terms, there is also a striking similarity in the conditions of survival. That is to say, in industry as in agriculture, there are some technical conditions which favour large scale more than others; these apart, the survival of small scale efforts also depends upon surrounding the producer with a well organized network of services, operating on a large scale. Whether we are interested in agriculture, or in industry, in mining, in transportation or in retailing, we shall always find that some spheres offer more scope than others to small scale enterprise, and that in addition the success of small scale operations even in these spheres depends upon a proper organization of marketing, of credit, of research, and of education, all of which need usually to be done on a large scale.

Cottage industries are most likely to survive, in the first instance, to the extent to which they are a part-time occupation. Farmers and their wives are fully occupied in agriculture only for a part of the year. If they spend the rest of the year manufacturing in their own homes, largely for themselves, their costs of production, in terms of alternatives foregone, are so low that they can stand very severe competition. In practice, the greater part of the output of cottage industries is produced by full-time specialists, and not by agriculturists in their spare time. However, some social workers in the village improvement campaigns are persuading farmers' wives to take up handicrafts in their spare time.

All handicraft production has the advantage, compared with factory production, that it economizes two scarce factors, capital and supervisory skill. Capital is very scarce in under-developed countries, and so those which have abundant resources of labour, relatively to land and other resources, are wise to develop methods of production which use labour rather than capital. Factory production also calls for a great deal of supervisory skill, in the shape of

foremen, engineers, accountants and the like, and such skill is also in short supply. These disadvantages of factory production may be offset by the superiority of machine production. The machine may be superior either in terms of the quality of the work, or in terms of the quantity of labour required. Quality superiority shows where the product has to be standardized, and made in precise sizes, or shapes or patterns. Here the machine is often more precise than human hands and eyes, and in such work it quickly supplants the handicraft worker. If on the other hand questions of precision do not arise, the competition is then mainly in terms of labour cost. Some machines are much more productive than others in this relative sense. Thus the loom used for weaving in factories is not essentially different from the loom used in the home, but the factory machine used for spinning is immensely more productive than the spinning wheel used in the home. Accordingly, home weaving continues to be economic long after spinning has disappeared into the factories.

Small scale production, whether in the home, or in the small workshop, is best able to survive in industries where there is no mass standardized demand. Once there is mass demand it is profitable to invent highly specialized machines to do the work, and the disappearance of the smallest units is then only a matter of time. Besides, as we have just seen, if standardization is a condition of purchase, the handicraft worker is at a disadvantage, compared with the machine, either because he cannot control his own output exactly, or because of the difficulty of getting other handicraft workers to produce exactly the same article as himself, so that even output may be bulked and sold in quantity. Lack of standardization is one drawback to the marketing of handicraft products, as has been found by those who have tried to sell such products in the markets of Britain or the United States. The chance of survival is greatest where the commodity is bought in small numbers; and where there is advantage in the fact that no two pieces are exactly alike. The consequence is that the sphere for individual production is very narrow. There is room for artistic work in textiles, in wood, and in precious metals, but the mass demand for textiles, for footwear and for metal goods must be expected to pass to the factories.

The prospect of small scale industry depends, next, upon improvement of its techniques. Often the tools in use have not changed for centuries, and it is possible to improve them very substantially, in the light of modern experience, without altering the basic skills required by the craftsman. Just as in small scale agriculture, there is room for a government research agency, to experiment in improving techniques, and for an advisory service to spread the new knowledge among producers, so also, in small scale industry, efficiency and the prospect of

survival are much enhanced if there are agencies charged with experimenting in improving the craftsmen's tools and techniques, and with spreading the new knowledge amongst them. Improvements in technique are not confined to equipment; the craftsman can be introduced to better materials, e.g. for dyeing; or to ways of testing his materials; or of ensuring greater accuracy or standardization. Of course, the greatest revolution which has been made in techniques is to attach small electric motors to the craftsman's tools, and to connect them to electricity; this alone multiplies output per man. But in most under-developed countries it is simply out of the question to carry electricity into many villages.

Next comes the organization of marketing and of finance. The craftsman cannot afford to hold stocks of materials, or to produce finished articles for stock. If he works to customers' orders only, he will as likely as not be subject to much irregular unemployment. Production is most economically organized if there is a middleman between the craftsman and the final consumer. The middleman can carry stocks; can arrange for bulk display in shops, in order to widen the market; can arrange to have several craftsmen producing identical articles, if the market requires standardization; and can arrange for the work of different craftsmen to be assembled, if the article is one which lends itself to specialization and assembly. Such work is often done by private middlemen, but it is generally thought that the middlemen are able to take advantage of the craftsmen, by getting them into debt. In these days, therefore, governments are creating agencies to perform these functions, sometimes in conjunction with the functions of research in new techniques, and advice. Probably the best results have been achieved in Indonesia, where successive governments have put considerable effort into improving and organizing the handicraft trades, through agencies specially created for the purpose.

Indonesia has excelled in reorganizing old trades, but Japan has excelled in organizing new trades on a cottage industry basis, without, indeed, the government having much to do with the matter. In that country the 'putting out' system seems to have taken firm root. Private merchants supplying materials to craftsmen to be worked up in their homes, or in small workshops. The system is specially famous for its extension into trades where a commodity has to be made in several parts; the parts are put out to individual craftsmen, or to small workshops, working to detailed specifications, whereafter the assembly is done in central factories. Thus, many commodities are being made by Japanese craftsmen today which were totally unknown to their forefathers. The survival of small scale production depends upon continuous enterprise of this sort, bringing new commodities

within the range of the system, for small scale industry must contract if it depends only upon age old products, since most of these will disappear into factories sooner or later.

The measures we have discussed so far have been for making cottage industry more efficient, rather than for protecting it against factory competition. Most people would agree that cottage industry should survive in so far as it can be made to compete on an economic basis with factory industry, and this is the case for having a systematic programme for research into techniques, for the improvement of raw materials, for capital, and for superior marketing arrangements. Protecting cottage industry is quite a different question; some governments have embarked on this, and it merits special consideration.

The problem has significance only in those countries where there is surplus labour in agriculture and in cottage industry which cannot be found full employment for lack of land or capital resources. It is then arguable that the real cost of using labour in cottage industry is zero, whereas factory production uses scarce capital and supervisory skills. If the cottage workers were willing to work for whatever money income they could get, however low, competition on the basis of price would yield the right result. In practice, however, they hold out for a subsistence income, and the prices they charge may exceed the real social cost. Hence whatever the difference in money cost may be, the difference in real cost favours the cottage industry. Obviously no such argument can be applied in countries where labour is relatively scarce. If this argument has validity, it is an argument for the more crowded parts of Asia, and not an argument for Africa or for Latin America.

Let us now consider the validity of the argument in countries where there is surplus labour. The point can be illustrated by a numerical example. Suppose that there are 100 cottage workers. And suppose that large scale industry could produce the same output by having ten persons continuously engaged in making, maintaining and replacing machinery, and thirty persons using it in factories. (There is also an interest cost on the capital involved, but this does not come into the argument of this paragraph.) Then, if the demand is the same, the establishment of factories would mean that forty people would do the work formerly done by 100, and that sixty would be reduced to destitution. The validity of the conclusion depends upon the assumption that the demand is the same. If, on the contrary, the demand increases by sixty per cent, there will be work for everybody if forty work in factories and sixty in cottages; and if the demand increases by 150 per cent, there will be work for everybody in factories. The cottage industry argument is therefore just a part of the general argument

about technological progress. If productivity increases faster than demand, unemployment is created; but if demand increases faster than productivity there is either inflation or increased employment.

The moral is simply that measures to increase the productivity of manufacturing industry (whether cottage or factory) must be paralleled by measures to increase the demand for manufactured products. This demand comes only to a small extent from industrial producers themselves, who are only a small proportion of the population of such countries. It comes to a greater extent from all other classes, of whom the farmers are far and away the largest category. If capital is being put into developing manufacturing industry while a country's agriculture remains stagnant, the result is bound to be distress in the manufacturing sector, as factory and cottage workers compete for a limited demand. But if there is balanced development, with the productivity of the farmers growing rapidly, and the demand for manufactures correspondingly increasing, there is ample scope for investment in industry. Moreover, in over-populated countries industrialization to some extent depends upon developing an international trade in manufactures. The secret of most development problems is to maintain a proper balance between sectors, and we shall have more to say on this subject in later chapters (Chapter V, section 3(b), Chapter VI, section 2(a), Chapter VII, section 1(b)).

When all this is said, it remains true that in countries which have surplus labour, capital can be put to better advantage in the early stages of development by using it to expand transport and other public utilities, irrigation and other agricultural requirements, and those forms of manufacturing where the advantages of large scale production are greatest—especially metals, chemicals, engineering, building materials—than by using it to compete with what the cottage workers can do fairly well—especially the weaving industry. This is only a temporary phenomenon. If development is taking place the demand for cottage products will soon catch up with the supply, and there will be room for an expansion of factories without significant unemployment resulting. Whether in the meantime the establishment of factories in spheres where cottage production is most likely to be able to hold its own should be relatively licensed is a moot point, depending on how effective the price mechanism is in reflecting the true social costs, and on how much confidence one can have in the way in which licensing is likely to be administered in the particular country. An economic case can be made for temporary protection of certain cottage industries, as a measure to prevent capital from being used wastefully, but not all economic cases deserve to have administrative support.

5. INSTITUTIONAL CHANGE

(a) The Process of Change

So far we have considered social institutions solely from the point of view of their compatibility with economic growth. Now it is time to consider how institutions change, and whether change follows pre-determined paths.

Perhaps it is as well to remind ourselves at the outset that economic change does not result exclusively from changes in institutions. Economic growth may occur because of an increase in capital formation, or because new technological knowledge becomes available, or for other reasons not originating in institutional change; a clear example of this occurs when foreigners bring new knowledge or new capital. Growth originating in one of these factors is almost certain to cause institutional change. Alternatively, there may be institutional changes which do not originate in economic change, such as changes produced by religious, political or natural upheavals—the idea that all social upheavals have an economic origin amounts to thinking that men are motivated by economic interest only, and is palpably false. This section is confined to studying the nature the causes and the effects of institutional change; but there is no suggestion that this is the primary or exclusive cause of economic change.

Our enquiry into the compatibility of institutions and economic growth led to the conclusion that institutions promote growth according to the extent that they associate effort with reward, according to the scope which they allow for specialization and for trade, and according to the freedom they permit for seeking out and seizing economic opportunities. Now the institutions of different countries differ greatly in these respects. Also the institutions of any one country are changing all the time however slowly or rapidly. They may be changing in ways which are favourable to growth, but they may also be changing in ways which restrict growth.

Probably the most important characteristic of institutions, from the angle of economic growth, is the amount of freedom to manoeuvre which they permit. Once it is possible for people to seize economic opportunities, growth will occur, and as it occurs institutions will accommodate themselves so as to protect incentives and to encourage trade. Conversely, if opportunities are reduced, growth will decline and institutions will begin to be adjusted towards stagnation. Suppose, for example, that gold is discovered in a community where all the institutions are unfavourable to growth—where there are only rudimentary conceptions of property, where families are self-sufficient, and where new activities cannot be started except under the strictest licence, which is seldom given. Then suppose that some

person—whether private individual or public official—is given a licence to mine the gold, to hire labour, and to import materials and staff from abroad. This is all that is needed to revolutionize institutions. The families will cease to be self-sufficient; there will be an immense growth of internal and external trade; property relations will become subtle and complex; and so on. Given the chance to seize opportunities, men will in due course alter all their institutions accordingly.

It follows that change reinforces itself cumulatively. Once economic growth has begun, institutions change more and more in directions favourable to growth, and so strengthen the forces making for growth. Alternatively, if the rate of economic growth begins to decline, institutions become less favourable to growth; monopolies are more acceptable and more easily maintained, families become more self-sufficient, vertical mobility is reduced, and social status plays a larger economic role, even to the extent of a movement towards feudalism.

It is easy to see why there are these cumulative processes. The continuance of a social institution in a particular form depends upon its convenience, upon belief in its rectitude and upon force. If growth begins to occur, all these sanctions are eroded. The institution ceases to be convenient because it stands in the way of opportunities for economic advancement. People then cease to believe in it. Priests, lawyers, economists, and other philosophers, who used to justify it in terms of their various dogmas, begin to reject the old dogmas, and to replace them by new dogmas more appropriate to the changing situation. The balance of political power also alters. For new men are raised up by economic growth into positions of wealth and status; they challenge the old ruling classes; acquire political power slowly or in more revolutionary ways; and now force behind the new instead of the ancient institutions. Once economic growth begins it will certainly erode the old institutions, and create new ones more compatible with further growth. In the same way, when growth stops, the institutions which suited an expanding economy are no longer appropriate. People cease to believe in them, the priests, the lawyers, the economists and the philosophers turn against them, and the powerful groups who favour the *cumus quo* are able to enforce changes unfavourable to economic growth.*

These cumulative forces work in the same way if the change starts not in the economic opportunities but in the institutions themselves. For then the very fact that people become more willing or have more chance to seize opportunities will itself either create or reveal new opportunities to be seized; and the emergence of new opportunities will in turn reinforce the changes in beliefs and institutions. It is

because of this cumulative interaction of economic opportunities and of beliefs and institutions upon each other that it is usually so difficult to lay one's finger on the 'fundamental' cause of change—to say, for example whether in Western Europe in the thirteenth to sixteenth centuries it was growing economic opportunities which brought theological changes, culminating in Reformation and Counter-Reformation, or whether it was changing theological conceptions that permitted people to make use of opportunities which would have existed in any case. All such questions are usually unanswerable.

The adjustment of institutions to changing economic circumstances may be a painful process. It is neither balanced nor complete. Change begins at some spot in the web of beliefs and relationships, and spreads outwards from there. Consequently some beliefs or habits in the culture are changed completely, while others continue to be held firmly. The new and the old are mixed illogically and in curious proportions, which differ widely from society to society. The transformation is never complete. This is why western capitalist countries differ so much from each other even today. They retain pre-capitalist ideas in different proportions, and differ in such matters as the closeness of kinship ties, equality of opportunity, attitudes to private entrepreneurship, attitudes to private wealth, and many other matters. A society in which the acceleration of growth has occurred only in very recent decades always displays many incongruities. People take a long time to adjust themselves to a money economy; to learn to take advantage of opportunities expressed in money terms; and to learn how to spend or how to keep money when they get it. They need a new pattern of morality, which may take a long time to be created; for they cease to live in a community where obligations are based upon status, and move into one where obligations are based upon contract, and generally upon market relationships with people with whom there are no kinship ties. Thus a community which has hitherto been extremely honest may become extremely dishonest, until people learn that honest service in labour or in goods has to be given even to perfect strangers in fulfilment of contracts expressed in terms of money. There has to be also a new sense of values; people no longer respect the old superior status; chiefs, grand-uncles and elders no longer command automatic obedience. Leadership shifts to other directions, and much time may pass before the new leaders either command or deserve to command the same sort of respect as the old. The decline of the old morality is one of the more painful aspects of economic change, and it is one reason why the moralists and anthropologists are usually opposed to change, or at any rate, to rapid change, since they know that rapid change causes old beliefs

and institutions to disintegrate more rapidly than new beliefs and institutions can be integrated in their place. Another example of incongruity which excites much attention in these days is the lack of balance between birth and death rates which occurs shortly after the start of economic growth, causing the population to increase. (There is similar excitement when economic decline is accompanied by falling population.) In a stagnant society birth and death rates are roughly equal at high levels. Then when economic growth begins, the death rate begins to fall; at first merely because the growth of communications and trade puts an end to local famines; later because of improvements in public health measures and in medical treatment. The death rate falls long before the birth rate starts to fall, and in the interval population may double in anything from sixty to thirty years. It takes some time for people to realize that if they are going to control death rates they must also control birth rates. (We return to this subject in Chapter VI.)

Faced with the incongruities of change, many people have wondered whether social change could not be regulated in a 'balanced' way, i.e. by preventing some beliefs and institutions from changing more rapidly than others. The answer seems to be that this is impossible. A culture cannot be changed in all its myriad aspects simultaneously and in equal proportions. Some parts feel the strain more than others, and give way, pulling others with them in differing degrees. We cannot always predict what will give way first, because this varies in societies according to their history and traditions; neither can we predict what parts of the culture will be pulled along, or in what proportions. The only way to prevent unbalanced change would be to prevent all change, and this no one can do.

Of course, while it is true that we cannot foresee all the changes which will result from any particular event, it does not follow that we can have no influence whatever upon the course of change. For example, we know that industrialization has resulted in the creation of urban slums in many countries in the past, but we also know that it is possible to have industrialization without slums if appropriate town planning measures are adopted. We know that in some other places it has been accompanied by vast migrations of labour from village to town and back, and we know that this also can be controlled and eliminated (Chapter IV, section 3(c)). What is more difficult is to foresee how human attitudes will change, on such matters as family relations, or respect for tribal authority, or religious observance, or the sanctity of contractual obligations. What some people fear is the disintegration of the old moral values as the new wine of economic growth pours into the old bottles of social stability. Presumably the extent to which old relationships disintegrate de-

pends partly upon how development is sponsored. If it is sponsored by foreign capitalists and governments, who show their contempt for the old political, religious and family leaders, it will erode established authority more quickly and effectively than if it is sponsored under established leadership. The Japanese are sometimes said to have adapted Western capitalism to suit their own way of life, but it is doubtful whether this was a conscious process. The fact is rather that the sponsorship of capitalism by already existing Japanese leadership groups reduced to a minimum the conflict between new ways and old authority. Economic growth has its least revolutionary consequences—in terms of its impact upon attitudes and social relations—when it is also least revolutionary in the class sense; that is to say when the new entrepreneurial leaders are accepted and sponsored by the old political, religious and social hierarchies. This is also the great difference between Asian and African reactions to economic growth. In Asia the old religious and political systems were tougher than in Africa, and were not completely destroyed by the Western impact. Whereas, in Africa the European capitalists and governments have acted in opposition to, and with contempt for the established customs, religions and ways of life, wherever these conflicted with European interests, with the result of more extensive disintegration.

Once institutions begin to change, they change in ways which are self-reinforcing. The old beliefs and relationships are altered, and the new beliefs and institutions gradually become more consistent with each other and with further change in the same direction. Nevertheless, it is not the case that growth, once started, will go on forever, or that decline, once started, is never arrested.

In the first place, all growth tends to be logistic in character, that is to say it starts slowly, accelerates, and then slows down again. This is because each stimulus to growth eventually nears the limit of its possibilities. A hypothetical example may illustrate. When radio sets are first introduced, the public is ignorant of their possibilities, and rather sceptical; at first only a few sets sell, but gradually radios become popular, and soon they start to sell like hot cakes. Something like a limit is reached, however, when every household has a radio set. As this limit is approached, the rate of growth of sales declines sharply. Sales may double in the second year, treble in the third, and quadruple in the fourth; but they cannot double every year for ever, because there just are not so many people. The same may apply to institutional change. When some new principle is introduced it is at first resisted. After a while, however, it takes on, and begins to be applied with enthusiasm to a widening range of social relations. But there must come a time when it has conquered nearly all the

ground where it is relevant. Growth is a response to successive stimuli, each of which ultimately reaches its limit. Continuous growth at a steady rate would therefore occur only if by some accident the new stimulus always arrived just as its predecessor was beginning to flag. In practice, the most we can expect is not a steady rate of growth, but successive surges of expansion, separated by periods of relative calm.

Experience shows, however, that even rhythmical growth may come to an end. Some societies have shown vigorous economic expansion, followed by stagnation and decline even to the point of leaving nothing but ruins behind. Growth may be followed by stagnation, just as stagnation may be followed by growth. History shows turning points of acceleration and of deceleration. In all enquiries into dynamic processes, it is the turning points which are most interesting, since the cumulative processes which follow immediately after the turning point are relatively easy to understand. We must therefore give most of our attention to studying these turning points.

Let us take first the accelerations. We have already made the point that what is fundamental to growth is the seizing of opportunities. Thus growth may accelerate either because new opportunities come into existence, or because institutional changes now permit opportunities to be seized which already existed, or for both reasons.

The new opportunities may be of many kinds. New inventions may create new commodities, or reduce the cost of producing old commodities. New roads, new shipping routes, or other improvements in communications may open up new opportunities for trade. War or inflation may create new demands. Foreigners may arrive in the country, bringing new trades, investing new capital, or offering new chances of employment. Such new opportunities are to a large extent independent of current institutions. This is not entirely so, and we shall be investigating in subsequent chapters the effects of institutions upon such matters as the rate of invention or the inflow of foreign investment. However, to the extent that such matters are not dependent upon a country's institutions, there may be an acceleration of opportunities, for reasons not connected with any change of institutions, and this acceleration of opportunities will be followed by institutional change.

It is also possible that there may be institutional changes permitting greater freedom of manoeuvre, without the underlying economic factors having changed. A possible case, but rare, is a change of heart on the part of the ruler, permitting people to manoeuvre in ways which were previously prohibited. A more likely case is a change of political regime, following upon some shock to the country, such as

is administered by war, famine, hurricane, earthquake, plague, or other disaster. Such shocks, sometimes weaken the grip of the ruling cliques, who favour the *status quo*, and allow power to pass into the hands of other persons who have an interest in change.

Thus acceleration may be due either to a change in the economic situation, creating opportunities which did not exist before, or to institutional changes which give greater freedom to seize opportunities. In practice, a turning point of acceleration is usually associated with both types of change. The economic situation has become more favourable to growth, perhaps because of increasing opportunities for foreign trade, and this has strengthened the hands of those people who wish to change the institutions in the direction of permitting greater freedom.

These innovators are always a minority. New ideas are first put into practice by one or two or very few persons, whether they be new ideas in technology, or new forms of organization, new commodities, or other novelties. These ideas may be accepted rapidly by the rest of the population. More probably they are received with scepticism and disbelief, and make their way only very slowly at first if at all. After a while the new ideas are seen to be successful, and are then accepted by increasing numbers. Thus it is often said that change is the work of an elite, or that the amount of change depends on the quality of leadership in a community. This is true enough if it implies no more than that the majority of people are not innovators, but merely imitate what others do. It is, however, somewhat misleading if it is taken to imply that some specific class or group of people get all the new ideas. For each innovator is an individual person, who may be advanced in some things, and just as reactionary in others; and who has no necessary connection with other innovators, either of class, of kinship or other connection. Nevertheless it is sometimes the case that the innovators constitute a separate group, or at least are forced to become a group, conscious of sharing the same interests, because barriers to their advancement force them to band together in self-defence or in attack. New ideas are not originated in any single class, but the originators may well find themselves moulded into a new class by the resistance which society makes to their innovations.

One of the more fruitful observations in the theory of economic growth is the generalization that it is 'new men' who play the most prominent part in effecting change at this turning point. This means that the ruling classes in the previous situation of relative stagnation are seldom to be found among those who are seizing the new opportunities, or effecting institutional changes which increase freedom to manoeuvre. In the first place, the ruling classes are usually satisfied with the *status quo*; they have no need to seek

new opportunities. It is people who are frustrated by the current set-up who seek other ways of using their energies and of realizing their ambitions. At the same time, while it is not those at the top of the social structure who initiate change, neither is it those who are at the bottom. Those who are at the bottom may be caught in the toils of slavery, or of serfdom, or of caste, and may not be able to seize new opportunities; or they may just be too poor, too uneducated, or lacking in courage or in traditions of enterprise. The new men thus come from intermediate social classes, probably near enough to the top to have some resources, some personal freedom, and some tradition of action. In Japan the new men of 1868 belonged to a lower order of the nobility, who were chasing at the loss of former privileges. In Western Europe in the thirteenth and fourteenth centuries the new men were former serfs or their descendants who had escaped into the protection of towns. In Africa the new men are the detribalized, who have some smattering of western education, and who can no longer fit into the old tribal patterns. Needless to say, this generalization is not absolutely rigid. The new men may include among their number one or two of the old aristocrats, and one or two from the lowest classes, since there are always individual exceptions to the class patterns. The generalization states only that the great majority of the new men will be drawn from an intermediate station.

The new opportunities, in the second place, may challenge the economic power of the existing ruling class. They may alter the value of land, on which the wealth of that class is based. Or they may challenge serfdom, or slavery, or by providing new opportunities for employment, may raise wages to the discomfiture of the ruling class. Then this class will be hostile to the new opportunities, and there may be a struggle for power, even to the point of civil war. Alternatively it is possible that the new opportunities do not menace the ruling class economically, in the sense of reducing their wealth but are an ultimate menace politically, in the sense that as the new men grow rich they will demand an equal share of prestige and of political power. In this case compromise is possible, for the ruling class may follow the example of the new men in exploiting the new opportunities (consider, for example, the role of the old landed aristocracy in the early development of the British coal and iron industries), and may agree to receive some of the new men into their ranks by inter-marriage or by ennobling them. Thus the development of new opportunities may in extreme cases require a civil war; but it may also be achieved by compromises after struggles of less intensity and bitterness.

The 'Whig' historians have tended to dramatize the role of revolution in effecting change, while the 'Tory' historians have played it

down. To the Whigs, revolution has seemed to be the necessary climax of change—like the bursting of the egg to release the chicken, or of the chrysalis to release the butterfly. The Tory, on the other hand, has pointed out that much fundamental change takes place without civil war. The old ruling classes may adopt the new ideas, and may thus become part of the new ruling class; or they may compromise with the new men and incorporate them into the old ruling class. If revolution comes, it comes long after the new men first appeared—perhaps even centuries later; for it comes only when they have been so successful and so well established for so long that they are in a position to command enough armed forces to challenge and to defeat the government. By this time most of the rights they seek have long been conceded. These generalizations, however, go too far. They apply well enough to the English Civil War, or to the French Revolution, or to the wars of independence in North and South America, in the sense that the proposition, established by these revolutions might have been accepted in any case in another generation or two even without war. But they do not apply to the Haitian Revolution, to the Restoration in Japan, to the Chinese Revolution (1912) or to the Russian Revolution, or to the succession of uprisings in twentieth century Europe and Latin America which have brought the dictators into power. Some revolutions may have been 'unnecessary', in the sense that history seems to have been going their way in any case; but others have created a sharp break with the past, and even a reversal of previous trends.

Another suggestion is that the decisive role in the acceleration of economic growth is always played by townsmen. It is probably true that townsmen contribute more towards change than do people living in the country, not because of their biological superiority, but for reasons of environment or opportunity. Thus, the towns led the struggle for greater economic freedom in the closing centuries of the Middle Ages in Europe, but then townsmen tend to be prominent in organizing most political movements, whether their aim is greater freedom or less, if only because government is usually done from cities, to which the politically ambitious are attracted. It is also natural that townsmen should take the lead in the advancement of trade, of manufactures, and in these days of invention; and natural that the advancement of agricultural techniques has depended, until the scientific revolution of recent decades, mainly upon the countrymen. The atmosphere of towns is also alleged to be more favourable to the attitudes and beliefs which favour growth. The fact that large numbers of people are thrown together in towns, in a competitive struggle for existence, weakens kinship ties and excessive respect for status; encourages impersonal economic relations and a willingness

to trade wherever opportunities are favourable; and sharpens the wits. Though, presumably in these and other respects one should distinguish between commercial towns, on the one hand, and military, cathedral, or political towns on the other. In addition, the fact that towns develop a great range of arts and entertainments means that the opportunities for spending money are virtually unlimited, that wealth tends to acquire as much prestige as birth, and that ambition is stimulated. Townsmen are also alleged to be more open minded and less superstitious than countrymen, and therefore to be better placed to pursue those scientific enquiries which result in improved techniques. The countryman is impressed by the power of nature, since nature so often frustrates all his work, with its droughts, its floods, its storms, its epidemic diseases of crops, and other signs of its strength. The town, on the other hand, is created by man, who has learnt enough of the secrets of nature to be able to erect great buildings, to trap water in great reservoirs and transport it where he wants it, to summon electricity out of the skies to be his servant, and so forth. So the townsman is more easily tempted to believe that man can do anything he wants to do, if he tries hard enough. There is no doubt that the attitudes of townsmen differ in many respects from those of countrymen simply because the town throws large numbers of people together. There is also no doubt that some of the results are specially favourable to growth. But towns have also played their part at the turning points of deceleration. For the town is the home of the mob, and mobs are as prone to sweep tyrants into power, who reduce the opportunities for economic freedom, as they are to take part in liberating movements. The town is also the home of the monopolists—the traders' associations, the guilds, the workers' combinations—whose aim is to restrict opportunities and to keep out new men. The town takes the lead in restricting the size of families, which is sometimes good for growth of income per head, and sometimes bad. And the town takes the lead in movements for reducing the amount of work done, and for working sullenly or resentfully, instead of doing the best one can with the job in hand. If therefore a case can be made for saying that towns lead out of stagnation into growth, as good a case can be made for saying that they lead out of growth into stagnation.

An alternative, and somewhat opposed suggestion, expects economic growth to be most vigorous along economic 'frontiers'. 'Frontier' in this sense is hard to define: it combines the idea of a place which is geographically remote from the commercial capital of a country, with the idea of a frontier between man and nature, that is to say a place which is still settled rather sparsely. Frontiers are expected to promote growth both because the opportunities for

settlement attract immigration, and also because their distance from the capital prevents them from being easily controlled, whether by law, by convention, or by the pressure of organized groups. Their institutions are therefore free, and easily adaptable. This combination of opportunity and of freedom attracts from more settled areas some men of energy who find themselves frustrated in more hide-bound conditions. The generalization is of doubtful historical validity. If a country has rich resources, whether on its frontiers or not, it will attract immigrants; and if a country is attracting a lot of immigrants its social institutions will be flexible. As its resources begin to be exhausted, or all its lands are taken up, or its differential advantages are reduced, immigration will be reduced, and its institutions will tend to be more stable. This much seems true. But there is no particular reason to associate it with frontiers. Frontiers sometimes contain attractive resources, and sometimes do not. Every country of the world has had frontiers in this sense throughout its thousands of years of history, but there are extremely few where these frontiers have played a significant role in setting the pace of economic growth.

There is much more in the suggestion that frontiers are significant in the ordinary political or cultural sense of the place where two nations or two cultures meet. This is because of the decisive role which foreigners usually play in economic growth. Indeed we know of very few countries where an acceleration of growth can be attributed exclusively to domestic evolution. This seems to have happened in the Fertile Crescent, five thousand years ago, in China, and in Renaissance Italy. Most other countries owe a large part of their acceleration to foreign contacts. Foreigners bring new ideas of social behaviour and social relationships, which challenge established patterns, and weaken faith in their moral sanctions. Foreigners also bring new opportunities for trade, or for employment. Or it may be foreigners who loosen the grip of the existing ruling class, so that the new men get their chance to manoeuvre economically, or to make their *coup d'état* politically. Foreigners may do this by threatening war, or by making war, or by conquering the country and in the extreme case deposing the existing ruling class. The behaviour of conquerors differs, and may make a great difference to the prospects for change. Some conquerors come to terms with the existing rulers, and support these rulers against dissident groups; while other conquerors back the dissident and overthrow the ruling class. Recent centuries have shown interesting differences in this respect between the British and the French. The British in India and in those parts of Africa which had strong ruling classes, such as Northern Nigeria, have made it their habit to back the ruling classes, and have always

been on very bad terms with the new men, who have therefore identified imperialism with reaction and stagnation—an identification which is certainly not true of imperialisms in general. The French, on the other hand, have believed in coming to terms with the new men, and have gone out of their way to try to turn Africans or Asians into Frenchmen, and to use them as a part of the French imperial system, even in the very highest positions. We must not, however, be thought to be putting an emphasis upon conquerors, for foreign traders, with or without war, play as important or more important a role.

There is also an indirect effect of the foreign impact, namely the growth of nationalism, which tends in these days to have important economic consequences. We associate nationalist political movements with countries which are or have recently been in colonial status, but nationalist feeling is by no means confined to such countries. Nowadays nearly all 'backward' countries resent their backwardness, and are anxious to stimulate growth, and since backward is a purely relative term, the desire that one's country should not fall behind others in economic growth plays its part in the economic policies of countries as widely different as Britain and China.

Strong nationalist feelings sometimes promote growth, but this is not always the case. For the 'new men' in politics and the 'new men' in economic activity are not the same, do not necessarily spring from the same class, and are not always in sympathy with each other. In the first place, not all nationalist politicians favour economic growth. Some, like Gandhi, have reacted against 'westernism', and desire on the contrary, to return to old ways. These however are in the minority among nationalist leaders. In the second place, many of the new men in economic activity are foreigners, and are therefore suspected or disliked by the nationalist leaders, who put obstacles in their way, instead of encouraging them. Again, many nationalist leaders are socialistically inclined; they are therefore suspicious even of their own native *bourgeoisie*, and tend to restrict their activities. All the same, nationalist governments tend in the direction of wanting to 'modernize' their economies; some of them extend educational facilities, or protect the peasants from rapacious landlords, or embark on schemes of capital formation in roads, water or other public services, or attack caste and other obstacles to vertical mobility, or reduce the power of superstitious priesthoods, or in other ways seek to promote change. Nationalism is a dangerous force, because it is so often based upon stirring the passions of envy and of hatred in great mobs of people; but it is also sometimes a constructive force, and it is playing a part in effecting institutional changes favourable to economic growth.

This brings us back to a point which we have made before, namely

that economic growth results not only from the manoeuvres of individuals, but also from the actions of governments. The turning point of acceleration may therefore in some cases be associated with the coming to power of a group of men—nationalists, for example—who are determined to promote economic growth, and who take positive measures for this purpose. In the materialistic conception of these matters, the new private entrepreneurs come first, capture the state, and use it to promote their ends. It may however happen that there is not much connection between the new private entrepreneurs and the new masters of the state either may precede the other, and they may be hostile or indifferent to each other. If the government is both determined and intelligent it can do a great deal to advance economic growth, whether by the improvement of public services, by education, by the reform of institutions, by the encouragement of new industries, or by pioneering with new technologies. We shall be returning to these matters in detail in our final chapter.

We turn next to consider the turning points marking deceleration of the rate of economic growth. Here again we distinguish between deceleration due to reduced opportunities, and deceleration due to institutional changes which restrict freedom to manoeuvre while the economic opportunities have not lessened. A reduction of opportunities may well result in unfavourable institutional change, but we wish to distinguish this from institutional change which occurs through the evolution of institutions and not as a result of changing economic circumstances.

Economic circumstances may change unfavourably in a variety of causes. Natural resources may be exhausted or plentiful, or may grow too large, or too small. Other countries with better resources may develop as strong competitors in international trade. There may be a great outflow of capital or of skilled talent from newly developing countries. There may be natural disaster, earthquake or hurricane, for example—or war may have similar effects. Some people have suggested that there may be unfavourable genetic change, due to the best types emigrating, or to unfavourable types immigrating, or to dilution of the superior types by intermarriage with the inferior, but we do not know enough about this subject to know how seriously the suggestion should be taken. Still others have suggested that there are natural tendencies towards stagnation involved in the way people spend their money as they grow richer, some say they spend too much, and others that they save too much, or that too much goes into tombs and monumental buildings, or that a voracious bureaucracy swells up, and so forth. In later chapters we shall be considering all these matters, both in terms of whether they are inevitable, and also in terms of their likely effects. It is sufficient for our present purpose to note

that economies can decline for one or other of these reasons, and have frequently declined in the past.

Our present interest is rather to enquire into the decline of economies on account of institutional change alone, not due to any of the matters mentioned in the preceding paragraph. This could occur because of increasing divergence between effort and reward, or because the channels of trade were increasingly restricted, or because of increasing limitations on economic freedom. There are always people who have an interest in furthering such developments. There are the people who might gain by having an increased share of the product of other people's labour, such as landowners, and would-be owners of serfs or slaves; it is not impossible for such people to gain political power, even by counter-revolution, and to use it to bring about a return to economic exploitation. Then there are the people who wish to retain an aristocracy by birth, and who resent the measures which aim at increasing equality of opportunity, such as progressive taxation, free schooling, or death duties; these also may acquire power. There are also the would-be monopolists, who are potentially any persons whose interests are damaged by competition; this means nearly everybody, since competition damages us in our individual capacities as producers, and benefits us only as consumers of other people's products; and so the political left and right may easily find common ground in restricting competition, trade, change and growth. And finally there are the planners, left and right, who dislike the results of economic freedom, and who may succeed in subjecting managers, workers, and controllers of resources to such extensive regulation that the pace of change is reduced. It is by no means inevitable that economic growth will continue once it has started.

It is necessary to emphasize that institutional change does not depend exclusively upon changes in physical environment, in technology, or otherwise in material conditions. Changes in these factors do often give rise to accommodating changes in institutions, but it is also possible that institutions may change so to speak on their own, without material conditions changing. Thus the Haitian Revolution, which destroyed a prosperity based upon slavery, and substituted for it poverty and freedom, cannot be attributed to technological or environmental change. The opposing view springs from excessive emphasis on the power of the economic trend to dominate political and other social beliefs and relations. The economic trend may be in favour of developing this or that line of activity, but the political trend, or the trend in social attitudes, or the trend in customs and taboos, may be all the other way. Prosperity can be destroyed merely because people adopt habits or beliefs which are inconsistent with

economic expansion, or because groups come into power who impose unfavourable institutional changes.

Whether a society will permit groups to use political power for restrictive purposes depends very much on how well educated people are in political and economic matters. If enough people value the free economy, and are vigilant in preserving it, the economy will remain free. To explain why some peoples achieve and preserve freedom more easily than others would start a long enquiry, probably without conclusive results. It is sufficient for our purposes to observe that some communities have freedom in their history and traditions, while others have instead a long history and tradition of authoritarian regulation. A country which has a long tradition of freedom will be vigilant in keeping its institutions free, and if they succumb, we may surmise that it has run into serious troubles, such as war, or the reduction of its economic resources, which have shaken confidence in freedom. Whereas, a country which has a long tradition of illiberal institutions finds its freedom hard to win, and hard to keep.

These differences of history and tradition can sometimes be explained by geography. For, just as foreign influences play a great part in helping to start growth, so also they play a great part in helping to stave off decline. A country is most likely to retain free institutions if it is easily accessible. For it is then hard for the social structure to ossify. There is a coming and going of people, of goods and of ideas. New opportunities create new rich and new poor, and preserve vertical social mobility. New ideas prevent the more dusty superstitions from taking hold. The constant meeting of strangers makes it necessary to take men on their merits, rather than by reference to their status. And so on. Accessibility does not guarantee freedom; it may even increase the risk of foreign conquest. But it makes it harder for the enemies of freedom to prevail; and even the foreign conqueror may find it profitable not to stand in the way of economic growth.

(b) *The Cycle of Change*

This chapter is concerned with institutions from a particular angle, namely their evolution in the direction of stimulating or restricting growth, through the association of effort and reward, through facilitating specialization, or through increasing economic freedom. We have studied acceleration of this evolution, and the cumulative processes which are then set in motion; and we have also seen that deceleration can occur, and has its own cumulative downward impetus. We have next to consider theories of social evolution. Is there a path which institutional change inevitably follows? Is there a succession of stages? Is there inevitable 'progress'? Or is the

movement of history along some cyclical curve?

Many people have interpreted history as showing that each community must pass through certain specified stages of evolution. Such stages are defined differently, according to the writer's interest. If he is interested in the way people earn their living, he may see the community passing inevitably from nomadism, through settled agriculture, to trade and then to industry; and may expect its institutions to change in ways appropriate to each of these ways of making a living. If he is interested in class relations, he may see instead some such succession as primitive communism, slavery, serfdom, proletarianization, and 'socialism'. He may study religious change, from animism and ancestor worship to monotheism and rationalism. Or, in the sphere of political ideas, he may profess to see an ever widening allegiance, from the family, to the village, the nation, the empire, and finally to the United Nations.

Inevitable successions of stages are no longer a popular idea. Even the Communists have abandoned the idea that a country must pass through capitalism before reaching socialism or—since the arrival of communism in China—that communism can be made only by an urban proletariat and not by a peasantry. It is now clear that a community can bypass one or more of these stages, 'jumping' say from 'serfdom' to 'socialism', and equally clear that it may move 'backwards' as well as 'forwards', say from imperial to racial or to national or to provincial allegiance in politics. One reason why stages are no longer considered inevitable is that we have become more aware of the impact of one community upon another. Perhaps in former times, when communities were more isolated, each community could go through a series of stages without reference to what was happening in the outside world; but in these days the influence of a few powerful states stretches all over the world, and even the most primitive communities find themselves imitating the most advanced, without reference to the difference in their 'stages'. At the same time, those people who believe themselves to be bearers of the most advanced ideas, usually also consider their missionary techniques to be invincible; the Communists believe that they can turn any society communist, whatever its stage; the rationalists think rationalism is good for everyone; the internationalists carry their gospel into the most remote and self-sufficient villages. The idea that the stages are inevitable is resisted most by those who consider themselves to have reached the highest stage.

The idea of stages was also bound up, to some extent, with belief in the inevitability of progress, and it has therefore receded with this belief. The idea of progress is rather new in human history. Before the eighteenth century mankind more usually believed that there had

been a Golden Age in the past, and that history recorded the fall of man. Then for two centuries belief in the inevitability of progress seized men's imaginations, reaching its height when the theories of biological evolution arrived on the scene to complete the trilogy of body, mind and spirit—the mind evolving towards rationalism, and the spirit towards liberalism. Nowadays hardly anybody believes that progress is inevitable, and many dispute even that progress is a meaningful concept. Certainly, to bring the matter down to the plane of our restricted interest, it is not possible to hold that institutions evolve cumulatively in directions favourable to growth, since it is clear that there have been many periods in the past when the opposite has happened—when slavery has succeeded freedom, or increasing obstacles to trade have reduced specialization, or increasing rigidity of social classes and castes has reduced the opportunity to manoeuvre. Economic growth is not inevitable; and even the most vigorous growth can be stifled.

The nineteenth century optimists were of course aware that growth had often been stifled in the past; their belief in progress was founded on the idea that men—or at least men of European stock—had 'escaped from history', through the accumulation of knowledge. The most plausible defence of the proposition would be to say that it was possible for growth to be stifled in the past because men did not know enough about it, or about the ways in which it was stifled. They lost their freedom because they did not know enough political science to recognize attacks on freedom and to create invincible defences. Or they permitted measures which stifled growth because they did not know enough political economy. With the accumulation of knowledge of the social sciences, its diffusion among the people, and the increased application of reason in human relations, growth might hereinafter be secure. It is precisely this belief in the power of reason in human affairs which the twentieth century has lost. We know that human affairs are governed by men's desires, and that these cannot be proved to be right or wrong by reason, or be resisted exclusively by rational demonstrations.

To reject inevitable growth or decline is not necessarily to accept the cyclical conceptions. One may instead take a neutral position denying both that growth is inevitable and also that a cyclical movement is inevitable. For changes in the rate of growth are not exclusively due to the evolution of institutions. Once more we make the distinction between changes which are due to changing economic opportunities, and changes which are due to the evolution of institutions. Thus the rate of growth may slacken because population overtakes resources; or because of natural disaster; or because of a shift in the world's trade routes; or because of a decline of world demand

for the products in which the country specializes; or for many other reasons not originating in internal institutional change. One may even believe that growth is bound to end sooner or later—for one or other of such reasons—without believing that there is necessarily a cycle of institutional change. The present chapter, however, is concerned only with changes due to the evolution of institutions; changes due to other causes are discussed in later chapters.

Cyclical theories of institutional change assert that growth promotes construction, and *vice versa*. It is not thereby asserted that the long run effect of the cycle is to leave the standard of living unaltered. For cyclical movement is quite consistent with long run growth or decline. It is not asserted that the upward and downward movements must be of equal magnitude. All that is required is that growth and decline should alternate.

There are three classes of cyclical theories of institutional change, operating respectively in terms of biology, of social attitudes, and of social groupings.

Biological theories associate movements in one direction with one biological type, and movements in another with a different biological type. Men of one biological type exert influence in favour of institutions of the kind that promote growth, whereas men of the opposite type are disposed towards institutions of the kind that restrict growth. Then, according to such theories, these biological types alternate with each other. When the 'progressives' are in power, they promote growth. Inevitably, however, the ruling class comes to be diluted with 'non progressives'. Why this is so is not clear. Perhaps the 'progressives' fail to reproduce themselves adequately—the ruling classes in society usually have fewer children than the rest. Or perhaps they inter-marry with the 'non-progressives'. We do not know enough about the relations between human biology and social behaviour to pursue this line of thought profitably.

The cycle in social attitudes corresponds not to biological differences, but to opposed longings in the breast of each of us. Each of us sees the advantages of growth and the advantages of stability; each of us wants freedom and control; each of us wants material goods, and at the same time realizes that material goods are worthless in comparison with spiritual values; and so on. When growth begins, we are enthusiastic for it; but after a while it palls. We begin to long for stability; we reject materialism and return to spiritual preoccupations; and so on. Thus social attitudes alternate between favouring growth, and reacting against it, and social institutions alter in the same way. Such a theory does not, however, explain social change until it provides the link between changes in attitudes and changes in institutions. For institutions are changed by the efforts of groups of

individuals, usually because they have an interest in changing them (material, political, religious), and the change is resisted by other groups, whose interest is tied up with the *status quo*. Hence any theory of social change has to be translatable into terms of social groups with conflicting interests (not necessarily material).

Cyclical theories in terms of social groups may be idealistic or materialistic. The idealistic theories assert, like that which we have just considered, that men's beliefs swing between opposing poles. We are for change, or for stability; for freedom, or for authority; for the things of this world, or for a passionate concern with God; and so on. Whichever is the prevailing mood at the time establishes itself; the persons so disposed acquire influence and power, and institutions are moulded to their mood. After a while, however, people begin to revolt against their way of life. Their outlook has lost the fire which it had when it was being established; corruption has crept in; and the inadequacies of the philosophy are more obvious. So opposing schools are created, and it is only a matter of time before some individual of fiery personality finds a 'new' faith which sweeps the masses in behind him. Then we get a religious reformation, or a political revolution, or whatever it may be. These idealistic theories presuppose that men are moved by ideas of what life should be—in political or religious or romantic terms—and that these ideas by themselves, unidentified with material interests are capable of effecting social change; or that if they are identified with material interests, the ideas are primary and the interests they attract are secondary forces in social change (e.g. that it was Hitler who attracted financial backers, and not financial backers who made Hitler).

The materialistic theories, on the other hand, see social change in terms primarily of changing economic interest. These theories may take two lines. They may assert that the new economic class which has started the acceleration in the rate of growth—the 'new' men—in due course turns against further change. Or they may assert that growth stimulates resistance among those who lose by it, and that these in due course organize themselves to restrict further growth.

The first line may be elaborated as follows. While the new men are acquiring power and influence, they favour aggressively the 'open door'. They support competition, increased trade, vertical mobility, and the like. However, once they have established themselves, they begin to be more interested in protecting their own position than in assuring an open door for others. Former free traders now advocate tariffs. Former believers in competition now seek to build up monopolies. Former social climbers now send their own children to exclusive schools, and try to assure them a privileged entry into the world of economic affairs. The Radicals become Conservatives. Thus

the social system begins to ossify. Besides, economic conditions change. The opportunities which brought the new class into wealth and power tend to disappear; for there are changes in technology, or in demand, or in the sources of supply. Growth is a response to a succession of stimuli, each of which may require different treatment from the last. This class may not be able to adapt itself to these successive changes; it may feel its wealth threatened, and may take steps to prevent unfavourable changes. A ruling class tends to lose its adaptability because it is hamstrung by its own traditions; there is a tendency to glorify the precepts and techniques which brought it into power, to look backwards, and to idealize the ways of pioneering forefathers. Hence, as conditions change, demanding new techniques, the class ceases to be able to cope, and becomes a drag on progress. When this class was new, its new men had to challenge an existing ruling group before they could make the fullest use of their opportunities; now they in turn may become like the old group, anxious to protect themselves from a new generation of new men.

The second line follows the behaviour of people who are hurt by accelerated growth. To begin with, there are people whose skills relate to the old technologies or demands, and who cannot adjust to changing conditions. There are the craftsmen who build up unions to protect themselves, and who impose restrictions on apprenticeship or on dilution, and insist on strict demarcation of the jobs which they alone may do. There are the small shopkeepers who resent the growth of large retailing; they band together to assure themselves protection, by exerting pressure on manufacturers, or by lobbying for legislation to control the chains. Many different groups are affected by change, and many of these groups form associations and bring pressure to stop or slow down the changes from which they are suffering. Since each of us is likely to suffer from change, in our capacity as producers, economic growth makes as many enemies as friends. When the social system was young, and demonstrating its power to deliver the goods, it commanded the enthusiasm of the people. But, as the number of dissidents grows, the ruling class ceases to command the allegiance of those over whom they rule. The society is divided against itself. There is a new struggle for power, in the course of which the ruling class tends to lose confidence in itself, and to compromise with the principles on which it came into existence. Barriers are erected to protect those whom change would hurt, and economic growth is slowed down.

There is no doubt that these things may happen. Equally we cannot say that they are inevitable. If there is a cycle, it completes itself more rapidly in some communities than in others, for reasons which we cannot fully explain. If we ask why community 'A' has remained

free for so long, while community 'B' has lost its liberty so easily, we are often driven to such explanations as, 'these people are less given to extremes', or 'these people have a better political sense' or some other mere restatement of the question. But if 'A' can hold out longer than 'B', perhaps it might hold out indefinitely, learning from experience what the pitfalls are? Perhaps 'indefinitely' is too long; but at any rate we clearly cannot predict how long or how short the cycle will be, and if the institutional changes are postponed long enough, economic growth may accelerate or decelerate for one or other of the many reasons not arising from institutional change itself. In sum, institutions may change in ways favourable or unfavourable to growth. The change may be a reaction against what has gone before or it may not. If it is a reaction, it may have set in early or it may be long delayed. This is about all that we can say on the direction change may take.

CHAPTER IV

KNOWLEDGE

THE proximate causes of economic growth are the effort to economize, the accumulation of knowledge, and the accumulation of capital. In the two preceding chapters we have examined the effort to economize, in terms both of the values which make economy seem worth while, and also of the institutions which encourage or frustrate economizing effort. In this chapter we consider the accumulation and application of knowledge, while the following chapter will deal with the accumulation of capital. We have already emphasized, in our introductory chapter, that these three factors are separated only for analytical purposes; they are equally important, and mutually inter-dependent.

Economic growth depends both upon technological knowledge about things and living creatures, and also upon social knowledge about man and his relations with his fellowmen. The former is often emphasized in this context, but the latter is just as important since growth depends as much upon such matters as learning how to administer large scale organizations, or creating institutions which favour economizing effort, as it does upon breeding new seeds or learning how to build bigger dams.

This chapter is divided into three parts. In the first part we examine the process by which knowledge grows; the second part deals with the application of knowledge to production, and the third part deals with training. Once more the division is analytical only. The growth and the application of knowledge stimulate each other, and where one lags behind the other is certain to lag as well.

1. THE GROWTH OF KNOWLEDGE

Knowledge grows because man is by nature curious and experimental. His curiosity causes him to enquire into things because they attract his attention, even though they may not be immediately relevant to his practical problems. And his desire to experiment is also greatly stimulated by the practical tasks in hand, and the problems they pose for solution.

Because each generation builds upon the knowledge of its forefathers the most important invention which has helped the accumulation of knowledge is the invention of writing. Until writing was invented each generation could pass on only what it could remember in the head—and how little this is we can discover if we compare

how much history the illiterate historians have passed on, in those primitive societies which have a specially appointed class of historians, with the amount of history passed on in literate societies—say comparing the history of the nineteenth century in both cases. Even more important is the difference which the art of writing makes to the handling of abstract ideas. Progress in mathematics, for example, is impossible without writing (many illiterate societies do not even have words to describe more than the first dozen numerals), and in every other field of study the knowledge of illiterates must end in the earliest stages of abstraction.

The second invention which has made all the difference to the rate of growth of knowledge is the invention of scientific method. This is really the work of the philosophers. It began in Ancient Greece, with the invention of logic and of metaphysics, but it did not come to flower until nearly two thousand years later, when the Renaissance reopened these fields of enquiry. Since that time the rate of growth of knowledge has been phenomenal compared with anything that went before.

Accordingly, in considering the growth of knowledge one must distinguish three eras, the pre-literate, the era of writing without scientific method, and the era of scientific method. In the same way we must distinguish between societies according to whether they are illiterate, and according to whether their culture and philosophy are imbued with the scientific outlook.

Much of the discussion of the conditions appropriate to the growth of knowledge relates to societies in the second stage—literate, but pre-scientific. It is fascinating to ask why there was greater progress in some countries than in others during this stage, or in some centuries than in others, within the same country. Similar questions might be asked about countries in the pre-literate stage, though we do not get very far with such questions both because the pre-literate peoples do not differ so widely in their technical attainments (they had invented the same tools, agriculture, smelting, and other technical processes, the major differences being whether or not they used the wheel, and whether they were capable of building in stone), and also because the evidence is so scanty. There are greater differences and more evidence in the literate but pre-scientific societies. The questions are not, however, any more answerable, and since they have little bearing upon the practical problems of our time (all countries now having available to them the results of the scientific revolution), we shall not spend a great deal of time upon them.

(a) Pre-scientific Societies

Broadly speaking, the rate of growth of knowledge in literate,

pre-scientific societies seems to have depended upon their philosophical attitudes, and upon their class structure.

The growth of knowledge requires a reasoning, questioning, experimental mind. This attitude presumably flourished best in certain environments, but we can only speculate as to which environments were most favourable, and cannot hope to reach firm conclusions on this subject. Presumably the questing mind flourished better in countries where religion was competitive, in the sense that there were many religious cults, between which the citizen was free to choose, than in countries where religion was authoritarian and monopolized. Similarly, the enquiring mind would flourish best in societies where political and economic power were widely diffused, and liberally exercised; this is indeed an indispensable condition for free speculation in the field of social institutions. The mind would also retain and develop the habit of questioning in an environment where it constantly encountered diversity of experience; in the town, where visitors come from all over the country, with different ways, rather than in the country; in the community engaging in foreign trade, and hearing constantly of different modes of living and doing; or in the area with many diverse resources, giving rise to great differentiation of occupations, which in turn produces different outlooks upon the world. Knowledge grows considerably through the cross-fertilization of cultures, so we should expect geographical situation to play an important role. There may also have been a secular pattern; a young and ambitious nation, it has been suggested, would be experimental; whereas, as the nation grew successful it would set in its ways, take pride in its past, its race, its religions and its institutions, and lose its faith in the virtues of free enquiry. We do not know what were the conditions for the questing mind in the pre-scientific societies, and we are not now ever likely to find out.

The same goes for the effect of class structure upon the growth of knowledge. Here one gets different results according to whether one considers the invention and application of new processes by the upper classes, or invention by peasants and artisans. As for the upper classes, it has been argued that the growth of science depended on the existence of a leisure class, with the time to think abstractly and to experiment, but this is a dubious proposition, partly because in such societies nearly everybody has leisure for half the year, when agricultural work has ceased, and partly because at this level of technology progress comes more from observing and experimenting in the course of doing one's job than it does from abstract thinking. It has also been argued that the upper classes are less likely to be interested in the adoption of labour saving devices in slave societies than in free societies, but we have already suggested (Chapter III, section 4(b))

that this argument fails in commercial slavery. As for the attitude of peasants and of artisans, it seems likely that much depends on the extent to which they are allowed to keep the produce of their labour. If landlords and princes are sure to take from them all but the cost of subsistence, however much they may produce, they will have little incentive to invent or to adopt ways of increasing output. This is perhaps the greatest single social factor affecting technological progress in such societies, since in such societies the attitude of the man on the job is probably much more important than the theoretical speculations of gentlemen of leisure. Another 'class' factor which may have been important in these societies was the extent to which knowledge was monopolized. Though we call them literate societies, in fact only a tiny proportion of the people were literate, mostly priests, administrators, and business men. In many societies the literate guarded their secrets jealously. The illiterate also formed themselves into guilds, and made a mystery of their crafts. Knowledge does not grow rapidly if it is kept a secret for the few.

Whatever the reasons may have been, communities have differed widely in the status they accorded to scholars, and in the respect and affection in which they were held—e.g. consider the favourable status of scholars in China or in Renaissance Europe. It seems most doubtful, however, whether these differences in the status of scholarship have had much bearing upon technological progress, both because few scholars were interested in science, and also because the science in which they were interested was remote from technology. During most of the written history of man, the growth of technology has owed very little to science as we now understand the term, that is to the application of an existing body of abstract principles. Invention has been done by two classes of people, by the worker at the job, and by the professional inventor. The former class includes all those who, in the course of their daily activities, observed ways of improving their methods, or experimented with ideas which came to them. The latter consisted at any time of a few individuals, usually gentlemen of leisure, who were interested in the science of their day. For the most part their interests were metaphysical, theological, or astrological, and if they turned their minds towards invention the results were only occasionally of practical importance, if only because their isolation from the practical tasks of daily life prevented them from knowing in what fields the most fruitful practical contributions could be made. In the earliest days these 'scientists' gave extremely little thought to technological questions. However, with the passage of time, the accumulation of technical knowledge, and the writing of the first treatises on the subject, an increasing proportion gave their minds to such matters. There was a comparative outburst of mechanical

invention in the Greek world, during the five centuries before the birth of Christ. Thereafter, so far as we know, the interest of scholars in these matters was subordinated to theological and other speculations, and there is no similar outburst until after the Renaissance.

It is just as difficult to account for a decline in the rate of growth of technical knowledge in one country as it is to account for differences between countries. Presumably one has to seek the reasons which cause scholars to disinterest themselves in technology, investors to lose interest in labour saving, or the common people to lose interest in increasing output. One has for this the same range of explanations as we saw in Chapter III, section 5, when we were dealing with the general problem of institutional change. One can invoke biological factors, or changes in the valuation placed upon material things, or changes in political or religious attitudes which make free enquiry dangerous, or checks to investment resulting from monopoly or from insecurity, or increasing pressures upon the common people which deprive peasants and artisans of the incentive to increase their output, or excessive war or civil strife. The most interesting case for study is the apparent decline of technological progress in the Greek world after about the first century B.C., for which no fully convincing explanations exist as yet. There is also considerable discussion of the possibilities of technical stagnation in our own day, to which we shall refer in Chapter V (section 3(d)).

(b) *Invention and Research*

The third stage in the history of technology begins with the Renaissance, which stimulated the growth of knowledge in every field. In so far as relates to economic growth, the most important results of the intellectual activity of the Renaissance occurred in the philosophy of knowledge, in mathematics, in social science and in mechanical invention. In the philosophy of knowledge the foundation was laid for the development of pure science which, though it did not begin to flower for some time, in due course proved of such fundamental importance. Mathematics gained immediately, though the consequences of this were also postponed. The social sciences also gained immediately, for there were set in train at once political speculations out of which the modern studies of economics, politics, psychology, jurisprudence and sociology have grown. There was also a revival of interest in mechanical inventions, which gained momentum in the sixteenth, seventeenth and eighteenth centuries, until the nineteenth century saw the emergence, among the class of inventors, of people who engaged in invention not as an offshoot of their daily labour, or as gentlemen of leisure seeking knowledge, but as a full time occupation, at which they hoped to make their fortunes.

Pure science made its contribution to technology first of all through chemistry, starting slowly in the seventeenth century, and not achieving spectacular effects until the nineteenth. Then came also the applications of electricity, and in our own century the spectacular contributions of other branches of physics.

This background is necessary if we are to understand the curious relationship which now exists between science and industry. The layman thinks of the world in which he lives—at any rate the manipulated part of it—as having been created by science, and is often astounded to learn that over large realms of industry the practical men have no use (or have even contempt) for scientists. The fact is that the great inventions of the eighteenth and nineteenth centuries were not made by scientists—the steam engine, the inventions in weaving and spinning, the new system of agricultural rotations, the new ways of smelting ores, the machine tools—these were all invented by practical people who knew no science, or very little. It is only in the twentieth century that a scientific education has become essential for the would-be inventor, or that the discoveries of science have become the major source of further technological progress.

Science has affected invention in the twentieth century in more ways than one. Not only has it become necessary to be a scientist in order to be an inventor, but a good deal of invention has now passed beyond the individual working on his own, into the laboratory staffed by a team of scientists. These transitions are by no means complete. It is still possible for the worker at the bench, using his machine, to notice ways in which performance could be improved, and to suggest useful modifications. Progress is still made in these ways, though it is not great in relation to the total stream of invention. It is also still possible for the lone inventor, with some scientific knowledge combined with a mechanical flair, to make quite important inventions. Probably the greatest number of inventions in the fields of mechanical engineering, as well as of animal or plant genetics, are still the work of a single mind. Team work has its best use in the chemistry of materials and in the physics of radio and of nuclear fission.

Much is now said and written about the organization of technological research, meaning by this the kind of research which is done by teams in expensive laboratories. It is still, however, necessary to take account of the work of the lone inventor. His position seems also to have been transformed. A few still work on their own, at home or in their laboratories, in their spare time, or even full time, but most have found invention too risky a source of full time income. The majority seek employment by others, who will provide a laboratory and a salary, with perhaps also a share of royalties. They may share

the laboratory with other inventors, each pursuing his own line. And they may be restricted by their employers as to the subject on which they may work. Conditions range all the way from freedom to working in a team. The number of gentlemen of leisure, who invent for pleasure, is insignificant (it always was).

The growing importance of team research presents new problems of organization. Such research is very expensive, and is therefore beyond the reach of individual small firms. It is therefore the very largest firms which have pioneered this kind of research and this in turn gives them a very substantial competitive advantage over their small and medium size competitors. This advantage, however, is reduced if research is disintegrated from other activities of the firm, and done collectively for a group of firms or for an industry as a whole. This line of development has been pursued in the United Kingdom. On the one hand there have been created, with some financial help from the government, a large number of co-operative research institutions, owned and controlled by such firms as care voluntarily to join and to subscribe to the institution. And on the other hand there are also a number of government research institutions, wholly financed and controlled by the government, whose discoveries and inventions are open to all, such as the institutions controlled by the Department of Scientific and Industrial Research. Besides these institutions, the government also makes grants to private institutions, including university departments, to conduct particular researches; this is the principal way in which bodies like the Agricultural Research Council or the Medical Research Council discharge the duties laid upon them. This disintegration of team research is not complete, since in addition to what is done collectively or under government auspices, large firms continue to finance their own private teams and laboratories.

Another effect of science upon the growth of technical knowledge has been to divide the process into three separate stages, namely the formulation of scientific principles, the application of these principles to given technical problems, and the development of technical inventions to the point where they are ready for commercial exploitation. The first of these stages, the advancement of pure science, is now almost entirely left to the universities and to other non-commercial organizations. Now and then an industrial firm may permit a scientist in its laboratories to pursue researches which have no immediate relevance to its technical problems, but this is rare. The second stage, the stage of technological research, applying known scientific principles to the solution of commercial problems, is the point where the inventors and industrial research teams, private, co-operative, and public, take over from the universities (some such

work is done in universities and technical colleges also, but for these it is a lesser occupation). The result of the work done at this stage is a formula, a blueprint, or a model. Then comes the problem of translating this result into something which can be manufactured cheaply, in large quantities, and at standard quality. This production problem, known as the development stage, is often as difficult and as costly as anything that has gone before. For example, the idea of an aeroplane driven by jet propulsion preceded by many years the first flight of such a plane; vast time and money went into such problems as choosing metals able to stand the heat, or designing fuselages appropriate to the speed. The development stage cannot always be distinguished sharply from technical research, either because some of the development problems are technical, or because the same people engage in research and development. A line of principle can however be drawn.

In its effects upon the structure of industry the development stage presents the same problem as research, namely that in some instances only the biggest firms can afford to undertake the development work, and this gives them an advantage over their smaller rivals. Could this problem be tackled in the same way, namely by disintegrating development from the other responsibilities of the firm? The obstacle to doing this lies in the fact that the decision whether development should go forward is essentially a commercial decision, to be made in the light of estimates of the potential demand for the commodity, while the decisions which are made at the previous stages are more of the nature of scientific decisions. The advancement of pure science is in the hands of scientists, who go more or less by the principle that all knowledge is worth having for its own sake, a principle which is fortunately but only secondarily supported by the belief that all scientific knowledge becomes useful in due course in one way or another. At the stage of technological research, the decisions are not so exclusively scientific; some commercial judgement is also needed in choosing the problems which it is worth trying to solve; all the same, the scientific element is still of great importance, and not much is lost by disintegrating these decisions to institutions ruled jointly by scientists and by business men. It is quite appropriate at this stage that time and money should be spent on demonstrating a much larger number of possibilities than will in fact be taken up. However, once the scientists have demonstrated at the research level what is possible, their role is largely ended. The decision which of these possibilities is worth exploiting, and which should be neglected, is a commercial decision, to be made by people whose expertise is rather in the field of production costs and of potential sales.

In a private enterprise economy, this decision is left to the individual firm, which must make its own estimates and lose or gain according as the estimates are right or wrong. Alternatively, the decision could be entrusted to a committee of all the business men in the industry concerned, in which case the industry as a whole would decide which inventions to develop, and the industry as a whole would pay the cost. Apart from the difficulty of defining an industry for this purpose, many people believe that the effect of this would be to hold up progress, either because the industry acting collectively would also act monopolistically, to protect existing investments against technical change, or else because the collective judgement of new ideas is so often wrong that it is arguable that progress depends on individuals being free to back their own judgement despite collective disapproval. The decision might also be entrusted to a government committee created for this purpose, and given funds for developing new inventions. Such an agency has been created in the United Kingdom, but it has no monopoly of development, and can make decisions only about such inventions as are offered to it. To give a monopoly of decision to a government committee would seem to have the disadvantage of both worlds; because the decision would have to be made collectively the individual initiative would be suppressed; and because the decision makers were not using their own money they would have no pecuniary motive to take care that their decisions were commercially sound. We may therefore conclude as follows. We are likely to get best results at the development stage if any person who thinks that an invention will pay is free to back it with his own resources or with those of others who are willing to share the risk. In those cases where the development is very costly, this gives an advantage to those who command large resources. If, to avoid this differential advantage, development were made a collective responsibility, other disadvantages would follow. There is no perfect solution for any social problem. In any case, the advantage of large scale organization in some fields is one of the facts of life; we cannot always escape it, however much we try.

The division of the process of invention into the three stages of pure science, technical research, and development helps to throw light on the problem of patents. Discoveries in pure science cannot be patented. They are also not usually kept secret, not because the discoverer could not sometimes make a fortune by applying his discovery secretly, but mainly because it is contrary to the professional code of scientists to keep their discoveries secret. The advancement of science requires that many minds should work at the same problems, each fertilized by the thought of the others, and science would certainly suffer if the freer exchange of ideas were

substantially restricted. There are such restrictions today, on the movement of scientists across frontiers for international discussion, and on the publication of results in fields closely related to national defence; the restrictions are still small, but many people fear them because they fear that once the principle of free exchange of ideas is violated, restrictions may spread more widely. Since scientific ideas do not become private property, scientists cannot live by selling them. Hence the advancement of pure science is largely a charge upon the public funds.

When we pass to the stage of technical research, the results are patentable. This follows from the fact that technical research is financed mainly by people who expect to make a profit from it, and who must therefore obtain private property in the ideas derived therefrom. In the nineteenth century, when invention was done mainly by lone inventors, it used sometimes to be argued that the flow of inventions would not be significantly reduced even if the ideas could not become private property; either because the number of inventors inventing for the love of the thing was enough to keep up an adequate flow of inventions; or else because the inventor who kept his invention secret and exploited it commercially could make enough monopoly profit out of his invention in the early stages to reimburse himself for the expenses of invention. Neither of these arguments was accepted universally in the nineteenth century, and their chance of acceptance is even smaller today. Inventions must become private property if invention is to be financed by private interests. If technical research were financed out of public or non-commercial funds, the argument for private property would disappear; inventions could then be freely available to all. So long as invention is financed by interested parties, however, the results must become private property. The advantage of the patent system at this stage is that it not only protects the owner, but also encourages him to disclose his invention, and so maintains the free flow of scientific ideas.

Our patent system, however, conveys monopolies not only upon the inventor but also upon the developer, and later upon the commercial producer. The developer claims his monopoly on two separate grounds; he claims a monopoly of development, and also a monopoly of subsequent production. The inventor is free to license as many developers as he chooses, but in the vast majority of cases developers undertake to develop only if they are given an exclusive licence. The case for a monopoly of production is, however, sounder than the case for a monopoly of development. The monopoly of production rests on the same argument as the inventor's monopoly, namely, that since development is expensive those who are to finance it require some assurance that they will be able to

reimburse themselves by having a monopoly of production once they have solved the development problems. This is no reason, however, for giving a monopoly of development. For just as all inventors freely use the principles of science, in a race which gives the patent to the first successful inventor, so also there might be a race in which many developers worked on the invention, with the monopoly of production going to the first successful developer. This monopoly would follow automatically if development resulted in patentable processes, on the present definitions used by patent law, but the protection could also be widened to include the protection of all new industries, as the law was originally intended to do (and as is now done in those under-developed countries which accord 'pioneer status' to new industries). There are still many people who argue that neither development nor production needs protection. Essentially they argue that the advantages to be derived from priority are such that there would be an adequate flow of risk-bearers even without protection. This is certainly true of a number of industries; but it is equally true that there are other industries where priority confers little advantage, compared with the cost of development, and where the rate of progress might therefore be reduced if developers were not given exclusive rights.

The three-fold division of the process of invention into pure science, technical research, and development is important also in assessing where different countries should lay their emphasis. For example, it has now become popular to say that the United Kingdom, when compared with the United States, spends very inadequately upon pure science, but falls behind in the later stages. It is doubtful whether Britain falls behind in the stage of technical research, in the sense that fewer inventions per head of the population are produced in the United Kingdom than in the United States; on the contrary, if we consider recent technological advances—artificial fibres, jet engines, television and the like, the United Kingdom seems to be well to the forefront of invention. Where she lags behind is in bringing new inventions to the point of commercial mass production. This leads to the conclusion that the deficiency is not in research or invention in any sense, but in the incentives for the exploitation of new knowledge; we shall therefore return to her case in the second part of this chapter.

The poorer countries differ from the developed in that they have no real need to spend significantly on the advancement of pure science. For the most part, they can leave this to the advanced industrial nations, whose results are freely available to all. There may be exceptions in the sense that some parts of science are of greater interest to them than are other parts of science, but it is very hard to

think of examples in the realm of pure science. In any case, the growth of pure science is somewhat like the wind, 'which bloweth whither it listeth', and it is doubtful whether any good would come out of expenditures by the poorer countries which were designed to affect the discovery of new scientific principles. Technical research is quite a different matter. Much of the technical research and invention done in the developed countries applies equally to the under-developed countries, and can be borrowed wholesale. The developed countries, however, have concentrated on applying scientific principles to their own problems, which are not the same as those of the under-developed countries. For example, the principles of thermodynamics have been applied to inventing ways of maximizing the heat utilized in the burning of coal, in which many of the poorer countries are deficient, rather than the heat utilized in the burning of wood, which some of these countries have abundantly. The principles of genetics have been applied to improving the varieties of wheat, rather than to improving the varieties of yam. The principles of physiology have been employed to devising ways of living in temperate zones, rather than ways of living in the tropics, and so on. Hence there is very great need for technical research in the under-developed countries, in all matters where they are situated differently from the developed countries. Finally, even where the results of technical research are applicable, the development problems are different. For methods of production which are economic in countries which have abundant coal, iron ore, capital and skilled labour, may be totally uneconomic in some other countries, whose problem is rather to devise means which use mostly the available surplus of unskilled labour, and such materials as can be had cheaply on the spot.

There is no doubt that one of the main deficiencies of under-developed countries is their failure to spend adequately upon research, and upon the development of new processes and materials appropriate to their circumstances. Part of the reason for this is institutional. In industrial countries private entrepreneurs spend great sums on industrial research, because they hope it will pay them to do so. The under-developed countries, on the other hand, are agricultural. Where their agriculture includes large commercial companies, these companies have invested in research (e.g. rubber, bananas, sugar) either individually or collectively, but in all that part of their agriculture (the major part) which is not organized on this basis, there are no private interests financing research. It follows that almost the whole of the research expenditures needed in these countries (i.e. excluding mining and commercial agriculture) has to fall upon the public purse. Whereas in industrial countries research can be thought of primarily as a matter for private interests, with the

government plugging gaps, in under-developed countries research is primarily a matter for governments, and ought to be one of their major fields of activity.

How much ought they to spend? This is of course an unanswerable question. Current expenditure on industrial research and development in the United Kingdom is estimated at a little under one per cent of the income generated in industry. In the United States industrial research is at a similar level, while agricultural research is a little less than one half of one per cent of the net value of agricultural output. On the same basis it would not be unreasonable if the under-developed countries were to spend on research of all sorts (technical, social, health, etc.) a sum equal to between $\frac{1}{2}$ and 1 per cent of their national incomes (not to be confused with government expenditure). There is no firm basis for such a suggestion. All the same, current expenditures, which do not reach a fraction of this level, are clearly too low.

So far we have discussed mainly technological knowledge; a word must now be said about social relations. Man has been no less inventive in this than in the technological field. The process of invention, however, is rather different. In the first place, many important social inventions were not made by individuals; society, in the process of adjusting itself to changing situations, imperceptibly creates new social institutions, which are often not recognized as such until long after they have been in operation. Yet, there are also cases where we can spot the individual inventor and even name the date — e.g., wherever the invention is created by the process of legislation, or by administrative action (unemployment insurance, the collective farm, central banking, government by parliament, to name a few instances). In the second place, the stages in the process are different. We can think of a stage of enunciating general principles, and a stage of applying these principles to problems if we like, but the relationship is more often the other way, namely that people who have a practical social problem to solve are often led by this to theorize about society, so that social theory is much more the result of social 'research', than research is the application of theory. The development process is also very different. Interested persons unite to make propaganda for their idea, so that it is either gradually accepted, or imposed by force. In other words, social knowledge grows through a political process, which throws up particular problems for attention, and the sponsoring of proposed solutions also depends upon political support. This differentiates social knowledge from technological knowledge only superficially, in the sense that both depend upon interested support. All the same the difference is not without importance. For, if the technological scientist sells his interested supporter a formula which

is false, in the sense that it will not do technically what it is required to do, he is soon found out. Whereas the social scientist can get away with selling formulae which are false in the sense that they give an untrue picture of the world, but which are nevertheless highly successful in the sense that they enable the interested supporter to fulfil his political ambitions. The moral is that while it may be safe to leave the promotion of technological knowledge to interested parties, it cannot be safe to leave the extension of social knowledge primarily to interested parties. Each one of us has a personal interest in the structure of society, which colours our approach to its problems. This is as true of social scientists as of anyone else. Social scientists, however, have their code of professional integrity which makes them strive to be as objective as they can be in the presentation and analysis of facts. The truth about society is therefore most likely to be ascertained and promoted by those social scientists who work in institutions financed in such ways that scientific freedom is preserved.

The under developed societies have as much to gain from borrowing social inventions as they have from borrowing technological inventions from the developed societies. To name just a few—the invention of an efficient administrative service relatively free from corruption, the invention of free compulsory education, the invention of a system of land tenure which stimulates investment and preserves old family units—in fact this book itself may be thought of in one sense as a catalogue of useful social inventions. And again in the social as in the technological field there must be care in borrowing. Some of the inventions are inappropriate at current levels of development (e.g. Tibet does not need universal insurance against unemployment), others need modification (e.g. reliance on private enterprise in spheres where private enterprise has not developed) and still others would be dangerous (e.g. payment of family allowances in countries where the population is already doubling every twenty-five years). One is often impressed in these countries by the fact that they are as short of ideas in the social field (and of people to carry them out) as they are of capital or of natural resources. Expenditure on the study of society deserves therefore a high priority as does expenditure on other branches of knowledge.

2 THE APPLICATION OF NEW IDEAS

There is always a gap between what is known to the experts to be the most effective way of doing things, and what is actually done by the great majority of people. It is not enough that knowledge should grow; it should also be diffused, and applied in practice. The rate at which knowledge is taken up depends partly on the receptiveness of

the people to new ideas, and partly on the extent to which institutions make it profitable to acquire and apply new ideas. We shall consider each of these in turn.

(a) The Attitude towards Innovation

New ideas will be accepted most rapidly in those societies where people are accustomed to variety of opinion, or to change, and are therefore pragmatic in their outlook. We have already considered the main factors which create such a situation, when we were considering the conditions which favour scientific enquiry (section 1(a) of this chapter). The main ingredients we stressed there were political and religious variety, and a geographical situation which brings together people of many different occupations, or from many different parts of the world. A country which is isolated, homogeneous, is proud and authoritarian is by contrast unlikely to absorb new ideas quickly when it meets them.

Apart from this general background, the rate at which a new idea is received depends also partly upon the idea itself. In the first place not all new ideas are appropriate, however useful they may be in some other country. For example a new seed may yield abundantly in good weather, but if it is also exceptionally sensitive to drought, it is not appropriate to a locality where the rainfall varies widely from year to year. A new idea may also be inappropriate because the technological level of the society is not yet ready for it. For example, a new tool may not be acceptable unless the local blacksmiths or mechanics can make it, or at least can repair it when it breaks down. Or the new idea may require considerable changes in capital equipment. For example the adoption of a new high yielding seed may require that improved mills be built for grinding it, new barns for storing it, or new transport facilities for carrying it. Or the use of new fertilizers may have to wait upon the provision of irrigation facilities, if the land is otherwise too dry for fertilizers to be productive. It is not often that a new idea fits into a society without at the same time requiring a range of other changes in skill or of capital formation, in order to accommodate itself. This is one of the main reasons why there is so often a gap between the expert who arrives from another country, and the people whom he is advising. The expert takes for granted a whole set of conditions upon which his innovation depend, but which are no part of his expertise, and are not present in his mind. The person advised, however, may see at once that the idea will not work in his conditions, or if he does not see this at once, may in due course be frustrated when one unforeseen obstacle after another prevents him from getting the results which are obtained elsewhere. The only remedies for the situation are humility

on the part of experts, combined with willingness to make pilot experiments on the part of those whom they advise.

In addition to technological readjustments the new idea may also involve social changes, and may be resisted on this account. For example, the introduction of central mills for extracting oil from the oil palm fruit doubles the yield of oil, but it also deprives the wives of West African farmers of the perquisites they get when they extract the oil for their husbands, and is therefore strongly and effectively resisted by them; it also alters the division of labour between husband and wife, and anything which does this has far-reaching and unforeseeable consequences. Or the innovation may damage whole classes of people who earn their living in particular ways, and who therefore resist its introduction. Such were the Luddites, whose behaviour is repeated daily in every community, by workers or capitalists or landowners who lobby to prevent changes which would damage their particular interests. Innovations are not therefore easily introduced in communities where there is tenderness towards established expectations; it flourishes better in places where competition is well regarded, and where attempts to create or preserve monopoly positions are ruthlessly suppressed.

The innovation will also have a hard time making its way if it conflicts directly with current taboos or religious doctrines. In such circumstances a new idea is frequently championed first of all by minority groups, such as religious, racial or political minorities, with whose creed it does not conflict; or by frustrated or dissident members of the majority group who take it up as a way of expressing their dissidence. This is one reason why progress so often comes not through the efforts of those who are in authority, but in opposition to their efforts.

Much depends also on who are the first sponsors of an idea. If the idea is sponsored by influential members of the society, it is likely to be accepted more rapidly than if it is introduced by people whose opinions carry no weight. In some societies influence is wielded by persons in authority—by chiefs, elders, priests, magistrates and rich men, and the effort of the innovator has to be directed in the first instance to persuading people in authority. This is one of the advantages claimed by the British for 'indirect rule' in Africa: once the chief and elders were persuaded, they told the people what to do, and the new idea was universally applied; whereas in more democratic societies it is much harder to get new ideas accepted. In some societies there is tension between those in authority and those whom they govern; the old rulers may be on their way out, and real influence is centred elsewhere. Finding the point at which to begin is the first task of would-be disseminators of new ideas. The influence

of foreigners also varies very much. If they establish themselves as a rich and powerful ruling class, people will probably want to imitate them, and their ways will spread. But foreigners may also be hated, for anti-imperialist reasons, or despised, because of their lowly origins, and some or all their ways may be deliberately rejected. In practice, foreigners are the greatest vehicle of new ideas today, whether their influence is exercised in person on the spot, or through their writings, their films, or their radio programmes, or through students and visitors from the home country visiting foreign lands.

(b) Knowledge and Profit

If new knowledge is to be accepted and applied to production, it must be profitable as well as new. It takes effort to acquire knowledge, and to apply it may require both extra resources and also extra willingness to bear risks. The application of knowledge therefore demands an institutional pattern which associates differential effort with differential reward. We have already discussed this matter in Chapter III in general terms. It remains here only to say a few words with special reference to the institutional requirements for the acceptance of knowledge.

Essentially the point is that there must be adequate differentials in the rewards for skill, for responsibility, and for risk-bearing. The extent of differentiation for these factors seems in practice to vary with the degree and the rate of economic development. In societies where output per head is not growing, the supply of skill often exceeds the demand; it is hard to find work for all the people who qualify, and the differential payment for skill is small. This situation ceases when growth begins. Economic growth makes enormous demands for skills of many kinds. It is associated with a great increase in specialization, and therefore in the range of skills. This in turn increases the need for co-ordination, increases the average size of firm or other economic unit, and increases the demand for supervisory and administrative staff. The 'middle' classes thus grow rapidly, relatively to all others. In this process the differentials between skilled and unskilled, literate and illiterate, supervisory and supervised, tend to widen. And this process is especially helped if, in order to meet the demand for skills, it is necessary to recruit skilled people from more advanced countries; for such people have to be paid salaries higher even than they could earn at home, and this enables their native counterparts also to demand incomes which are disproportionately high when compared with the incomes of farmers or of unskilled workers. Accordingly, in societies at this stage, differentials are wider than they are both in less developed and in more developed societies.

The currently high differentials in the U.S.S.R. are an excellent example of the point.

This situation rights itself as the spread of educational facilities begins to increase the flow of people with superior training. Compulsory education comes into force, so that mere literacy ceases too command a premium. Technical schools and apprenticeship arrangements multiply the supply of carpenters, mechanics, builders, and other grades of skilled artisan. Secondary schools produce an outflow of typists, clerks, teachers, and personal assistants of various kinds. And universities begin to pour out the people needed at higher levels. As the supply increases, the differentials are reduced. High differentials also stimulate the substitution of machinery; machines are introduced to do work for which manual skill was formerly required, and these machines are manned by people with little skill, at lower levels of wages. There may also be significant institutional changes. In the beginning it is the skilled workers who most easily organize themselves into trade unions and professional associations, for the purpose of raising earnings. But in due course all are unionized, and if the skilled feel themselves menaced by the unskilled with new machines, they may take particular care themselves to organize the unskilled and to keep the differential between skilled and unskilled from being substantial. All these factors cause differentials to narrow in advanced economies, with well developed educational facilities. And they also of course create social tensions, since the 'middle' classes resent the fact that they are losing their place on the economic ladder.

It seems that much the same happens to entrepreneurial incomes. In the early stages of development there is a marked reluctance to take the risk of branching out in new lines. Money goes easily into land, into trade, into moneylending, and into urban housing, but the native capitalists will not venture into mining, into public utilities, into commercial agriculture or into manufacturing unless they see chances of exceptional profits. Besides, they have little knowledge of such matters. These fields are therefore left to foreigners, who bring with them new techniques, both of production and also of organization, and who in turn are attracted only because they believe that they can make much larger profits than they would if they invested their money at home. In the early stages of development, profits grow as a proportion of the national income, and so do savings (the process is described in Chapter V). The foreign entrepreneurs are also widely imitated, to the point where eventually native entrepreneurs are so numerous that the economy ceases to depend upon foreign entrepreneurship. It grows up into economic independence, and may even in due course begin to export capital and entrepreneurs itself.

Outside the sphere of agriculture, which can be conducted on a family size basis, economic growth is bound to be slow unless there is an adequate supply of entrepreneurs looking out for new ideas, and willing to take the risk of introducing them. Thus a private enterprise economy will be retarded if it has not enough business men, or if its business men are reluctant to take risks, whether because they cannot raise the capital, or because they are timid by nature, or because the differentials for risk-taking are inadequate. For example, we saw earlier in this chapter that many people compare the United Kingdom with the United States, and say that the adoption of innovations is slower in the former. We pointed out that this is not due to any deficiency of invention, for the United Kingdom has been well to the fore in inventing new commodities and processes. If there is a deficiency, it is a difference in the rate of bringing new commodities to the stage of mass production. This is a deficiency not of research, but of entrepreneurship, suggesting that, for one reason or another, British entrepreneurs are not as quick to exploit new inventions as are their American counterparts.

Entrepreneurs are stimulated to innovate by the desire for social success, by the hope of big profits, or by the fear of great losses if they fail to innovate. The first of these motives is weak in societies where business success is not highly regarded; the second has no point in societies which tax profits and capital gains heavily, and the third disappears if the general atmosphere of the economy becomes monopolistic rather than competitive. If it is true that British entrepreneurs are less enterprising than American entrepreneurs--and not every one accepts this as a fact--the explanation is probably to be found in one or other of these factors.

Many under-developed countries, awakening in the middle of the twentieth century to a strong desire for economic development, are embarrassed by what it seems to require in terms of inequality of income, whether as between the 'middle' classes and the farmers, as between foreigners and natives, or as between profits and other incomes. For the climate of our day is hostile to income differentials in general, to foreign differentials in particular, and to handsome profits in the extreme. These, however, are part of the cost of development. One way to respond to this situation is to hold up development, keeping it in step with the supply of native skills, and with the capacity of the public service to substitute for private entrepreneurship. An alternative response is to accept these differentials as a temporary cost of more rapid growth. In either case the most effective remedy is to multiply as rapidly as possible the skills on which development makes acute demands, since this both hastens the possibilities of development and also keeps at a minimum its cost in inequality.

3. TRAINING PROGRAMMES

(a) Priorities

Economic development makes tremendous demands on educational facilities at every level. There is a greater demand for primary education, culminating in the demand that every child of school age should have compulsory education. More secondary schools are needed, either to supply more secondary education for its own sake, or else to provide material for the universities, or for further training as secretaries, teachers, or technical assistants. A whole range of training facilities is required for artisans, agricultural assistants, teachers, nurses, secretaries, mechanics. Outside the range of these institutions there is the field of adult education, extending from literacy campaigns or agricultural extension to literary classes. And crowning the whole system is the need for training at university level in almost every branch of knowledge.

The cost of providing all these services 'properly' is beyond the budget of any living country. Hence choice has to be exercised. Shall there be a few well trained or a much larger number half trained? Or what proportion shall there be as between technical and secondary adult and primary or humanistic and technological?

Take first the question of priority. The difficulty education raises is that it is both a consumer and an investment service. In so far as it is an investment, it contributes directly towards increasing output. There are countries where all education is suspect because of its potential damage to current authority whether political, religious, racial or caste. But most countries have no difficulty in deciding that all educational facilities which directly increase output are worth expanding to the limit, in the sense that the money spent on these facilities is a capital investment just like money spent on irrigation. The difficulty is where to draw the line with those types of education which contribute more to enjoyment than to output—literacy for example. Some members of the community must be literate, otherwise they cannot do their jobs. But it is not arguable that the majority of peasants, porters, barbers or domestic servants will be so much more productive if they are literate as to cover more than the cost of educating them. We want education for all these people not as an investment, but as a consumer good, because we think it will help them to enjoy some things more (books, newspapers), or to understand some things better (Not that they will necessarily be any the happier for this, they will only be more human.) In economic terms, such part of education as is not a profitable investment is on a par with other consumer goods, like clothes, houses or gramophones.

National income is not large enough for every person in the community to have his fill.

In the days before education was free, compulsory, and nationalized, each family solved these problems for itself, buying as much education from private teachers as it could afford, having regard to its income, its investment programme, and its other needs. Since the uneducated are not really in a position to judge correctly the advantages and disadvantages of education, the decisions made were incorrect, erring presumably on the side of under-valuing education—at any rate, in such communities the demand for education is extremely small, in relation to the population as a whole. Nowadays however, education is a public service, and therefore most of the decisions which have to be made are matters of political controversy.

Political views on educational priorities are changing. Fifty years ago most nationalist politicians nailed their flag to the mast of literacy; the supreme objective of educational policy was thought to be to get all the children into school. The emphasis was primarily on education as a consumer service: some of it would also yield dividends in the form of increased output, but it was a matter of national pride that the community should be literate, whatever the effect on output might be. In these days priorities are changing, and the investment types of education are receiving a stress which they never had before. For example the financial provision for agricultural extension services and for technical institutes is expanding rapidly in many countries. And adult education is coming to the fore. There are even education theorists who say that it is more valuable to teach the parents than the children at this stage. What the children learn in school, it is argued, they forget or ignore when they return home to their unenlightened families; and after five or six years of compulsory learning to read, many have forgotten how to read within three years of leaving school. Whereas, if the parents are taught to read and write, their children will learn too, in one way or another; and the parents can also be taught, at their own workplaces or farms, how to improve their productive skills. There are even extremists who say that too much is claimed for literacy; people should be taught to make more of their environments—taught ways of increasing yields per acre, or artisan skills, or child care, or dressmaking, most of which can be done without teaching literacy, and is more useful.

The same sort of ferment engulfs attitudes towards higher education. Education at university level is primarily seen as an investment, by those who submit themselves to it; it is a means of ensuring superior social status and superior income. The status of lawyers being what it is, and the income of the most successful lawyers being very attractive, this branch of learning has always been dispropor-

tionately cultivated. This is one reason why there are too many lawyers in most low income countries, and why it is believed that some lawyers are tempted into trickery in order to make a living. In countries where university facilities are provided extensively, the number of lawyers is so obviously superfluous that many students have to look to other faculties. If at the same time the community is not undergoing economic development, so that there is not an expanding market for engineers, scientists or doctors, the country is flooded with arts graduates, who have to take any jobs that they can get, and who are extremely dissatisfied and first class material for political agitation because they cannot get the salaries or even the social status which they think their superior education deserves.

Looked at from the social point of view, the question whether university education is a consumer or an investment service depends simply on the supply in relation to demand. In those low income countries where large number of unemployable arts graduates are turned out every year it is primarily a consumer service, and is indefensible. It is indefensible because the cost of training a university graduate is so high that if education is only a consumer service it would be much fairer to spend the taxpayers' money on providing more primary schools, or on giving more children a secondary education, rather than to spend it on giving a relatively small number education to university level. But the situation is quite different in a community in which economic development is occurring fairly rapidly. Here there is an ever expanding demand for doctors, engineers, biologists, administrators, and all the other products of the university. Even the demand for more primary education also puts its strain upon the university, for, to have more primary students you must have more primary teachers; more primary teachers means more secondary students; this means more secondary teachers; which means more university students; primary, secondary and university education constitute a pyramid, where all levels must expand in step. The 'anomaly' of a poor country spending a lot of money to build a university when only ten per cent of its children are receiving primary education is no anomaly at all.

The general effect of changing opinions is to change the emphasis of educational budgets. Fifty years ago the main emphasis was on primary education, but today in many budgets much greater emphasis is given to higher education, to technical education, or to adult education (including agricultural extension). The tendency is to agree to regard these others as investment expenditure, and to give them absolute priority, while leaving the extension of primary education to fight for its place in public expenditure with roads, health, and all the other services which governments have to provide.

Apart from the question of priorities of different types, there is also the question of the quality of each type. Should primary education be provided for all children for five years, or for half the children for ten years? Must all primary school teachers have a secondary education followed by two years special training—in which case their numbers will be small—or should there be a rapid multiplication of teachers on short courses, who know little themselves beyond the three R's, but who can then be used for a rapid extension of the primary school system? The U.S.S.R. chose numbers rather than quality, and set about rapidly multiplying the numbers of half-trained teachers, agricultural assistants, dental assistants, medical assistants, and the like. There are two arguments for doing this. The compelling argument is speed. It takes time, and costs a lot of money, to train people to the highest standards of their craft. Hence if only the fully qualified are allowed to practise, most of the population are left without any dental, medical, agricultural or educational facilities, when they would be much better off if they could have the services of the half-trained. The other argument is that most of the work done by the fully trained can be done just as well by the half-trained. Hence it is a waste of skill to insist that only the skilled should practise. On the other hand, the main political argument against this 'dilution' of skills is national pride. In several countries where the proposal has been made it has been rejected by the press and by the nationalist politicians on the ground that national pride demands that 'our doctors (teachers, etc.) should be as good as those in England'—or whichever advanced country is the local model. There is also the resistance of professional associations, but this would probably not be effective if national pride could not also be enlisted on its side.

Opinion is also changing on the subject of how long it takes to teach a skill. Under the influence of professional associations and of trade unions the emphasis has hitherto been upon long periods of apprenticeship and training. During the second world war, however, when speed was of the essence of success, it was conceded that people could learn the essentials of a job sometimes in as little as a quarter of the time which had hitherto been required. New techniques were worked out for giving rapid training, with perhaps the most spectacular results in the fields of teaching literacy, and teaching foreign languages, but also with specially useful results in shortening the time required for training artisans and mechanics. These methods can play a major role in places where a shortage of skills is holding up development.

Yet another result of breaking the hold of the professional upon training programmes is the realization that education need not primarily wait upon professionals. 'Mass education' programmes act

upon the principle that each person who learns should teach, and new techniques have been worked out for mass adult literacy campaigns which do indeed make it possible for a relatively small number of trained teachers to achieve astonishing results, on the basis of students passing on their knowledge. The secret of success in any adult education campaign—whether in literacy, in agriculture, in child care or in Chinese literature—is to win the enthusiasm of the students, who not only therefore give their time and their minds to the subject, but also infect others with their enthusiasm and pass their knowledge on. This enthusiasm is all the more likely when the programme takes the student into itself to the extent of giving him also a missionary role, than it is in programmes where there is a professional barrier between student and teacher.

The dilution of skills is a perennial problem, since technological progress is always rendering established skills useless and creating new skills. It would do this in any case, but does this all the more because each skill, as it is established, begins to be monopolized by people who draw up codes of demarcation and rules of apprenticeship, desiring to secure superior status and remuneration for their skill, by limiting the numbers who are permitted to practise it. Monopoly always presents a challenge to new invention, so that its toll may be evaded. Hence every skill has a sort of life history; it is born, recognizes itself, becomes subject to a host of regulations, excites hostility and evasion, fights a rearguard action against new skills which are invading its province, and either compromises or dies; all this to the accompaniment of much pride, anger, sweat and tears.

There are now a number of countries (e.g. the Gold Coast) where the funds available for development cannot all be spent because of a shortage of required skills. Political factors will determine whether in these circumstances the rate of growth will be held up in the interest of quality and propriety, or whether there will be a rapid multiplication of the partially trained.

(b) Agricultural Extension

Agricultural education illustrates very well several points which we have just discussed, namely the problem of priority, the role of the partially trained, and the importance of enthusiasm.

As for priority, expenditure on bringing new knowledge to peasant farmers is probably the most productive investment which can be made in any of the poorer agricultural economies. For raising the productivity of the soil is in most places the surest and quickest way now available of increasing the national income substantially. For example, some agricultural experts assert that agricultural yields per acre could be doubled in India, by the application of techniques

now known—the most important sources of gain being better seed selection and control, more use of artificial fertilizers, greater use of pesticides, and better conservation and utilization of water supplies. Such striking possibilities are not open everywhere, because the gap between what is known to the experts and what is done by the farmers is not everywhere as great as this. In many places, however, this is merely because there has been failure to do necessary research on food production. For reasons already mentioned, agricultural research in the tropics has concentrated upon the commercial crops which are exported to industrial countries (sugar, cocoa, rubber, tea, etc.), and has almost wholly neglected what is produced for home consumption (yams, cassava, sorghums and the like) despite the fact that in nearly all these economies the manpower and acreage devoted to food production is four or more times as great as that which is devoted to commercial crops.

Research is a pre-requisite to extension, so where the basic research has still to be done, there is not yet scope for agricultural extension. However, once the knowledge becomes available, the need for extension workers is tremendous. If we assume that there should be one extension worker to every thousand persons gainfully employed in peasant agriculture, that two-thirds of the population are so employed, and that to maintain an extension worker costs four or five times as much as a farmer receives, then the cost of the service, including supervisory staff works out at more than a quarter of one per cent of the national income. Add to this the desirable cost of agricultural research (this chapter, section 1(b)), and we arrive at the conclusion that the Department of Agriculture should be spending on research and education somewhere between three-quarters and one per cent of the national income. The United States of America maintains something like this ratio of service expenditures to agricultural income; it has one extension worker to every 700 persons gainfully occupied in agriculture, and it spends upon agricultural extension and research about three-quarters of one per cent of net agricultural output. The United Kingdom also has a ratio of 1 to 700, but among the poorer countries of the world the only country which spends at this level upon agricultural services is Japan (it is also the only one which has had spectacular increases in peasant productivity).

If an annual expenditure of one per cent of national income per annum could increase agricultural productivity by one per cent per annum (equivalent to one half of one per cent of national income) this would be an extremely productive investment, since it is equivalent to a return of fifty per cent per annum. The increase in productivity cannot be credited exclusively to agricultural extension, since capital has also to be provided, for water supplies, tools, fertilizers,

etc. However, even when allowance is made for other needs, this complex of investments is the most profitable that agricultural countries can make. The rates we have used are well within the bounds of possibility. In Japan between 1880 and 1920 productivity per acre grew at a cumulative annual rate of 1·3 per cent per annum. Rates of one per cent have been attained also by England and by the United States. Countries which start with a much wider gap between what is known and what is done should have no difficulty in achieving spectacular yields from what they spend on agricultural services.

In order to provide agricultural service at this rate there would have to be a tremendous expansion in the number of agricultural officers. Many very highly trained people would be needed for research, and also to supervise the extension service, but the biggest expansion of all would be among the extension workers themselves, since one is needed for every five to ten villages. It would be impossible to provide these numbers if each had to be given a full university education in agriculture. But it is also unnecessary and undesirable to have university graduates for this work. It is unnecessary because the extension worker's job is only to transmit to the farmers techniques which have been thoroughly tried elsewhere. He needs to have his wits about him, and to know a good deal about practical agriculture, since he will otherwise be ineffective with the farmers. The best training for this is to have worked on a farm himself, doing all the farm jobs, and then to have spent a year or at most two being trained in the new techniques. It is also undesirable that the officer be a university graduate since his main problem is to make contact with the farmers and be accepted by them, and this is much more difficult for a university graduate than it is for someone whose background is not far removed from that of the farmers themselves.

The extension officer's main problem is to make contact; not just social contact, which is easy enough in village communities, but that contact of minds which results in imitation. For example, the main work of extension officers used at one time to be done on demonstration farms, owned and operated by the agricultural service. These farms cultivated the best plants in the best ways, and farmers were invited to visit them and to see the results for themselves. Even when yields were very high the farmers did not always imitate what they were shown. They argued that the results achieved on the demonstration farm would not necessarily be achieved on their own holdings. Perhaps the farm had been specially selected for soil or other qualities; perhaps equipment was being used, which the ordinary farmer did not possess; or perhaps the workers on the farm had had special training, or were receiving special supervision which would not be

available on the peasants' holdings. To get round these difficulties, modern extension techniques supplement the demonstration farm by persuading a few farmers to try out the innovation themselves on their own holdings. It is then clear to the remainder that good results have been achieved by farmers just like themselves on holdings just like their own. The success is no longer the success of a remotely controlled institution; it is the success of their neighbours, and hence it calls for gossip, interest, investigation, discussion, and emulation. One of the first tasks of the newly arrived extension officer is now to find out which farmers are most respected in the district, and most likely to be imitated, and to try to enlist their co-operation in the campaign he has in hand.

There is a world of difference between doing extension work in a community where the farmers are not used to the idea of technical change, and doing it in an environment where farmers look naturally to the scientist to solve their problems. In an advanced community like England or the United States the farmers know that the geneticists are breeding better varieties, that the entomologists and the pathologists are producing ways of controlling pests and diseases, and that manufacturers of machinery are constantly introducing improved equipment. They are keen to hear about these things, and so they subscribe to farm journals, they listen to radio programmes for farmers, and they attend meetings of farmers' clubs. In these ways new ideas are disseminated rapidly. The extension problem in backward communities is to create a similar atmosphere, in which the farmers look upon the agricultural officers as an essential part of the agricultural community, existing in order to make life easier for the farmer. Part of the secret of this consists in getting the farmers to form agricultural societies, for discussion, for visiting each other's farms, and for demonstrations. The other part consists in really having something to offer. If the extension officer succeeds in solving some problem which has worried the farmers—some disease for example—he will gain their confidence; whereas if nothing comes from taking his advice, the farmers will not take him seriously.

The background to farmers' enthusiasm is sometimes political. In a world in which farmers have been exploited for generations by landlords, moneylenders and traders it is difficult for them to work up enthusiasm for new techniques, especially if they suspect that the main result may be to increase the takings of their oppressors. Land reform is therefore often a necessary prelude to successful agricultural extension. If the country's political leaders begin to take a real interest in the farmers' problems—which most often they do not—and show by their deeds as well as their words that they are out to help the farmers, then the farmers are likely to respond. Agricultural

extension without the political changes and political enthusiasm which it requires may just fall flat.

We have observed before that the introduction of new techniques requires a great number of changes, not only in economic and social structure, but also in the provision of capital, and the acquisition of new skills. Agricultural extension must therefore be seen only as one part in a wider programme of agricultural improvement, which includes such other things as roads, agricultural credit, water supplies, efficient marketing, land reform, the development of new industries to absorb surplus labour, co-operatives, and so on. Economic growth always involves change on a wide front, and of no sector is this more true than it is of rural life.

(c) Industrial Aptitudes

Economic growth results in a continuous decline of the importance of agriculture relatively to other sources of employment. Hence other industries are continuously recruiting labour from the agricultural sector (absolutely, if population is stable, and relatively if population is growing rapidly).

It is universal experience that when labour first comes into industry (or mining) from the countryside its productivity is very low, compared with that of labour which has been working in industry for a very long time. There are several reasons for this. First of all, the industrial way of life is quite different from the agricultural. In agriculture one has short bursts of intense activity, from dawn till dusk, associated with planting or with harvesting, followed by long periods of idleness, or leisurely activity in the seasons unfavourable to agriculture. In industry, on the other hand, one is expected to work at an even pace for eight or nine hours of every day, five or six days a week, throughout the year. In peasant agriculture again, one works as one's master, plying a craft familiar from birth and making numerous decisions all the time. In the factory one is plying a new craft, under supervision, doing exactly what one is told, and acting merely as a cog in some very complicated mechanism, making perhaps one knows not what, to sell to almost certainly one knows not whom. The community is also different. In the fields one works alone, or with a few chosen friends. Whereas in a factory one works with a large crowd of people whom one has no part in choosing. It takes a long time to grow accustomed to these new ways of living, and to settle down into the kind of regularity industrial life demands. It is said that women and children make the adjustment more easily than adult men, and that this is one reason why industrial revolutions tend to rely so much upon child and female labour in their early stages, if not controlled in this respect. The transition is also easier where the

philosophy of the people already includes a great respect for discipline, for system, and for order in community relations, since this prepares them for the highly regulated life which they will have to live in large industrial undertakings. Some historians, for example, believe that the Germans and the Japanese took easily to industrialization for this sort of reason.

The differences of background between rural and industrial life also explain why new recruits are much better at some jobs than at others. For example, however knowledgeable and responsible a person may be on a farm, the knowledge required for exercising responsibility in a factory is quite different. Instead of having well developed instincts for rain and animal or plant behaviour, he must have well developed instincts for mechanical processes, which alert him to error or to opportunities of improvement. Lacking these, the recruit has to be taught one operation at a time, leaving the minimum to his discretion; he cannot do jobs where several different operations have to be performed and co-ordinated. The division of labour has to be all the greater the less skilled is the labour one is using. Correspondingly one needs to have a greater proportion of supervisors, to co-ordinate what is subdivided. The need for a high ratio of supervisory staff is a mark of all countries where industrialization is new, and, when these supervisors have to be imported from abroad, this is also one reason why costs in these countries are not as low as one might expect them to be, having regard to the low level of wages. Alternatively the use of very unskilled labour stimulates mechanization, since jobs are subdivided into the simplest processes, and also since the machine brings greater precision to some operations than unskilled workers can be relied on to have. This, it is sometimes thought, may be one reason why mechanization proceeded more rapidly in the United States of America in the second half of the nineteenth century than it did in England.

These differences of background explain also why discipline tends to be so strict and irksome in the early stages of industrialization. Many of the things which rural workers have a natural inclination to do are incompatible with efficient industry, and the task of forming different natural inclinations is no easier than is the task of preparing children for life as adults. Much of this discipline is crude and self-defeating, because it is exercised by persons who do not understand the problem or the people with whom they are dealing. But irksome forms of discipline cannot be escaped entirely in the early stages of industrialization.

With the passage of time, workers adjust themselves to their new environment and acquire a new range of knowledge and of instincts. They become more skilled, not only in the sense that they know more

operations, but also in the sense that their discretion can be left to operate over a wider range of problems—they recognize what is wrong as they did not before. Productivity grows with special rapidity as between the first generation of urban workers and the second. The process is hastened if the newcomers are allowed and encouraged to settle down to urban life, making a complete break with agricultural employment, and it is least rapid where industry recruits workers who remain with it for a year or so, and then return to their villages.

The use of migrant labour in industry is not a simple issue. There are some special cases. For example, Japanese girls leave the village to work in the cotton industry, and in due course return to the village to marry. Female labour has everywhere a similarly high rate of turnover whether migration is involved or not. Temporary mining communities are another special case; if the industry itself is only temporary, it obviously cannot build up a permanent labour force. Apart from these special cases, some industrialists believe that they get labour more cheaply in this way. They believe that young men who are leaving the village for a year only will do so partly out of a spirit of adventure, and will therefore come for lower wages; that they will put up with cheap and uncomfortable bachelor's barracks, since the period of occupation is short; that a high turnover makes impossible the creation of a strong trade union movement; and that if it becomes necessary to reduce the labour force, men can be returned to their villages without bothering about unemployment pay. It is most doubtful whether this reasoning is correct. Certainly the mining companies of Central Africa, which started operations on the basis of migrant labour, are now all abandoning it in favour of creating permanent labour forces. Money spent on purchasing an experienced and settled labour force is often the best investment. If the industry is subject to sharp cyclical or other fluctuations it may seem an advantage to be able to return the unemployed to their villages, but it is hopeless to expect continuously improving productivity on this basis.

Whether permanent or migrant, the new industrial force is too often crowded into unpleasant slums, without the amenities or advantages of town life. In this environment the incentive to break one's links with the village is at its minimum. There is no reason why new industrial towns should not be well planned, and equipped with family size houses, schools, parks, churches, cinemas and all those other amenities which make a good town a much more attractive place to live in (for most people) than a village. Neither is there any excuse for not developing a proper range of social services—medical services, unemployment pay, pensions and the like—in the absence of which the industrial worker is forced to keep one foot in

the village, so that he can return to it in case of need. The effect would be a healthier labour force, more settled, and more anxious for improvement on the job. These things cost more, but they also pay off in extra productivity, as well as in human happiness.

Of particular importance to the productivity of newly recruited workers are health and diet. In the poorer countries most people are infected by parasites of one kind or another, such as malaria or hook-worm, which sap their energy and reduce productivity without preventing people from turning up for work. It pays industrial companies to provide free medical services, to see that their workers are well housed and even to have the houses sprayed regularly with DDT. It also pays to provide free or cheap meals in canteens, to ensure that the workers are properly fed. Good welfare services inside the factory are even more necessary in these countries than they are in Europe or North America. Much of the difference in productivity is due just to unhealthy and malnourished bodies.

The productivity of labour depends also upon the training it receives. Much money is now being spent on building new technical institutes in the poorer countries for a whole range of artisan skills—building workers, mechanics, electricians and the like. These institutes meet a great need, since economic development creates a great shortage of all these skills.

Most of the industrial labour force, however, consists of skilled and unskilled workers who learn their work not in an institute but on the job. Much of this training is done badly, since the newcomer is merely allocated to some other worker who is supposed to teach him the job. Not many people, however good they may be at their own job, are also good at teaching it to somebody else, unless they have also received some instruction in teaching or take a special interest in the problem. The more efficient firms select for the purpose workers who have proved to have a special aptitude and liking for teaching. And they may also create special courses for newcomers, and appoint a special officer to run them.

These strictures on training apply equally to organized systems of apprenticeship. A system of apprenticeship is necessary in all those trades where experience is necessary to craftsmanship. All the same, most apprenticeship systems degenerate into a racket. Interested unions or associations prolong the period of apprenticeship, so as to reduce the inflow to the trade, and maintain scarcity earnings. The apprentice's time is then misused, since he is expected to spend his early months sweeping floors, carrying tools, making tea, or in equivalent pursuits. And the journeyman to whom he is attached may be a good, bad or indifferent teacher. It is therefore very desirable that apprenticeship systems be reviewed from time to time, that they

be associated with part-time or evening instruction, and that the firms which participate should give special attention to the selection of those workers to whom the apprentices are assigned.

Productivity depends, finally, on the worker's interest in his job. This is partly a matter of pay, partly a matter of the prospects of promotion, and partly a matter of the social atmosphere of the factory. In so far as it is a matter of pay, what is required is mainly that there should be adequate differentials for skill, for superior output, and for responsibility, so that the worker should be encouraged to give of his best, and should feel rewarded for doing so. Whether these incentives should be individual or based on group performance is a subsidiary matter, to be decided according to circumstances. As for promotion, this concerns relatively few, unless large classes are affected by some mass discrimination such as a colour bar, or discriminations based on religion, sex, nationality or the like. Such mass discriminations reduce the rate of economic growth, apart from their effects on social relations, if only because they deprive society of the superior talents of some of those against whom the bar is operated. In any case, even if promotion concerns only a few, these are a very significant minority, since their performance in positions of responsibility may make a substantial difference to the quantity and quality of output; it is therefore important that workers should feel that there is a clear road open to all who deserve it. As for the social atmosphere inside the factory, this is a complicated matter to which we made extended reference in Chapter III. It is a matter partly of size of firm, of amenities inside the factory, of opportunities for consultation, and of a free flow of confidence between workers and their supervisors. All industrial communities are wrestling with this problem, and we cannot yet be sure that it has any universal solution. One point on which most observers agree is the crucial position of the factory foreman, whether in maintaining good human relations, or in ensuring a high level of productivity. The system of selection and promotion must therefore be such that men who have the right qualities for foremanship are spotted quickly, and given training adequate for their important role.

Behind many of the problems of adjustment to industrial life lies the greater problem of the adjustment of ethical codes. The recruit to industry from tribal conditions has a very highly developed ethical code, which lays down for him patterns of obligation to a wide range of persons in relationships of kinship, age, political or religious status. If he comes from a non-pecuniary society, his code may contain no rules governing relations between employer and employed, buyer and seller, or workman and his mates; such precepts as 'a fair day's work for a fair day's pay', or 'a fair day's pay for a fair day's

work' are foreign to his code, and come to have meaning only as he acquires a new code appropriate to his new conditions. Even more foreign to his experience is the idea of nine hours continuous work every day for six days every week under strict supervision. The clash of moral codes is painful, and what emerges is often not recognizable by any person who was brought up in either of the conflicting codes. This makes it all the more desirable that very special efforts should be made to create a new and meaningful community life in areas of new industrial growth. Otherwise, what might be a disciplined, happy and productive community may instead become a spiritual, political and industrial sore. Historically, the establishment of a new way of life is often associated also with a new religious ferment. The spread of Methodism in the new industrial towns of England and Wales during the industrial revolution did much to integrate these new communities, and to provide newcomers to urban life with a system of ideas which suited their new lives and made them meaningful. Religious innovation has no doubt a similar role to play in most other industrial revolutions.

(d) *Business Administration*

Economic development creates a very great demand for competent administrators, whether in business or in public service. The poorer countries frequently have a multitude of business men—small traders especially—with a well developed passion for making money by buying in the cheapest and selling in the dearest market, or by lending money at the highest rates which the traffic will bear. What is deficient is not the spirit of enterprise, but the experience of administration. The economics of large scale production make possible a considerable increase in income if only people can be found capable of managing large undertakings efficiently, including managing large numbers of men and great quantities of physical resources; and it is in knowledge and experience of the problems of large scale administration that the deficiency of these countries is most evident.

The great entrepreneurs are born, not made. The men who introduce new commodities or new systems of organization—the Fords or the Woolworths—are few in number, and cannot be made to order. Most business men, however, have only to do a fairly routine job, for which they can be fitted by acquiring knowledge and experience.

Some of this knowledge can be learnt in business schools, but an important part can be learnt only by experience of the job, and the rest depends on personal qualities of temperament and character. Business schools can teach the tricks of keeping records (of stocks, orders, credit, debits, etc.), some of the tricks in the handling of physical resources (factory layout, care of machinery, the smooth

flow of work through the factory), and some of the tricks in the management of men (selection of staff, delegation of duties, methods of training and so forth). But they cannot teach a business man how to get on with his staff, so that he combines their loyalty with their efficiency—this he must learn in practice, if indeed his temperament permits it. Neither can they impart that commercial sense, which cuts out waste, adjusts the use of resources to the flow of output, knows what prices to pay or to charge, and knows how to buy and sell and how much credit to give. And it is quite beyond them to instil the sense of integrity, without which a firm cannot acquire reputation or goodwill, and without which it cannot therefore last.

In practice much of the experience required for competence in administration is gained by working in foreign firms at home or abroad, after which the employee becomes a manager on his own account. Hence perhaps the most serious indictment which can be levied against some foreign firms is their reluctance to employ the native people in any but inferior positions—usually because of racial, religious, or other prejudice. If no one will employ the local people above the level of clerks, they cannot learn how to manage industrial businesses for themselves; their economic affairs will then always be dominated by foreigners, and economic growth will be held up by the costs and shortages involved in dependence upon foreign enterprise. This is one reason why most colonial countries, as soon as they become independent, pass legislation or take other steps to compel foreign firms to open up managerial positions to local people. But even non-colonial countries have taken such measures: thus, when foreigners brought new trades to England in the sixteenth and seventeenth centuries, the patents of monopoly which they were granted often included the condition that the foreigner must train a number of Englishmen in his craft within a stipulated period.

At the same time, countries in the initial stages of development find it profitable to send some of their young people abroad, to gain experience in foreign firms. Thus the Germans sent large numbers of their young people to work in England in the last quarter of the nineteenth century, and their example was followed a little later by Japan, whose people were sent to Germany and to the United States. On their return a few go into business on their own; but most of them find employment in existing firms, domestic or foreign; or else in the ever expanding government service, which also demands knowledge and experience of administration. It may not be so easy for the coloured nations of the world to carry out this policy as it was for the white, since colour prejudice in the advanced countries may make it difficult to find firms willing to accept coloured trainees, but there are more opportunities than are in fact exploited. One favourable

circumstance is the fact that some of the industrial countries are anxious to extend their personal relations with the poorer countries, in order to divert orders to themselves away from other industrial countries; and for this reason they may welcome the opportunity to meet and train the men who will be giving the orders when they return home.

The main school of business experience, however, consists of the little men engaged in trading, in operating a lorry or two, in running a small workshop, and in similar small commercial enterprises. Many of these go bankrupt. A few go from strength to strength, and gaining experience, ultimately flower into the management of large undertakings. Frequently the numbers in these trades are excessive, and there is substantial waste of capital. It is therefore sometimes argued that entry into such trades should be regulated, either to ensure adequate incomes, or else to reduce the waste of resources. Looked at as a means of securing immediate output the over-development of these trades may be wasteful; but if one looks at it as a means of giving people experience of business management, the waste may be a training cost well met.

In some of the under-developed countries it is felt that the growth of the native small business class is menaced by the competition of immigrants in similar trades. The great European concerns tend to confine themselves to large scale activities, but the Indians and Arabs in East Africa, the Syrians in West Africa, the Chinese in Jamaica and the Chinese in South East Asia are to be found competing even in the smallest trades, and because they have a longer commercial tradition than the native peoples amongst whom they live, they tend to be more successful. Besides, immigrants tend to stick together, and to help each other, and this promotes the prosperity of the group as a whole. In such countries there is often a demand that native business men should be protected from the competition of immigrants in certain lines. This raises awkward problems of racial discrimination and in addition, since imitation and competition are the two roads to learning, it is not clear that native business men would progress more rapidly, or the community as a whole benefit, if the activities of immigrants were restricted. It seems a better policy to insist on immigrants taking native apprentices (as Tudor Britain did) and to create other opportunities for native business men to improve their abilities. (Migration is further discussed in Chapter VI.)

In their anxiety to develop local sources of enterprise, some governments create special financial institutions to lend money to small business men. This is helpful in so far as the deficiency of local enterprise is simply shortage of capital. However, this is seldom the case. The local capitalists are deficient in the skills of management,