Throughout these lectures, I have been talking from a British point of view. But the world, whether we like it or not, is divided into the advanced and the backward nations, and I am very concerned that Britain shall remain in the advanced group. With great effort and determination, I think we shall be able to achieve this. But the writing is on the wall: we are now only the thirteenth richest nation in the world, in terms of wealth per head. It is going to be difficult enough to hold even that position; without automation, it will be impossible.

A Basic Error
I have been assuming that we shall embark on a national policy leading towards automation and that this will result in a great increase in our national wealth. Some people appear to find this difficult to believe, but I should like to suggest that many of the arguments about automation arise simply because people slip unconsciously into the basic error of grafting today’s problems on to tomorrow’s conditions. The future does not arrive with today’s problems: the future arrives with its own. We habitually take two different periods in time and lump them together. On the one hand, we accept that there will eventually be machines to do our work for us and that there must be far-reaching social changes to deal with the extra wealth that can and will be created; and, on the other hand, we talk earnestly about some problem which plagues us today, and project it into the future, as if it were a permanent and unchangeable feature of society.

We recognize the absurdity of this when we look backwards, but not, unfortunately, when we look forward. Today we do not, for instance, regard the problem of child-labour in Britain as either real or urgent. We no longer wonder, as parents once did, how to feed the family if our children are unable to find work because of some new labour-saving machine. We recognize that this is not a problem of our era. It is not easy to escape from the attitude of mind which Professor Galbraith calls ‘conventional wisdom’, particularly if we are to deal with the ‘conventional wisdom’ of only twenty and thirty years ago and not of a hundred, as in the case of child labour. Most of the thought-patterns of a hundred years ago are obviously obsolete, but those of twenty or thirty years ago, those of the period during which we ourselves have grown up, are much less easy to recognize as being totally obsolete. Yet it should be clear that in, say, fifty years’ time, our descendants will not have the problems and conditions that face us today.

Evolutionary Process
The past turns almost imperceptibly into the present, and the present into the future, without our being aware at the time that any big change is taking place. Although we
may talk glibly of a second industrial revolution, this will in fact be noticed only after it has happened: the process itself is evolutionary. It is only when we become aware that the revolution has occurred that we accept the new, often radically new, attitudes it involves. As an example of this, consider for a moment the changes in the status of women that have occurred in the past fifty years and then speculate on what may happen within the next fifty years. I am sure that automation is going to free both women and society from the need for routine drudgery in factories and offices. I am equally sure that society will be better off as a result, because it will get not only greater domestic happiness but its voluntary social work done so much better by people who really want to do it and who have the time and energy for it.

Look at America where, through gadgetry, there has been an enormous decrease in the time most women have to devote to their domestic chores. I doubt very much if you would find many of them looking for work in the kitchen as a way of filling in time. They discover what they consider to be more interesting and rewarding activities. Yet how frequently it has been said that if women do not occupy themselves with domestic work their minds will be empty and they will be unhappy. But the exact opposite is proving to be the case. We find women busily buying every conceivable gadget to avoid having to do monotonous repetitive work. And as a result they have more time to devote to their children, their husbands, and their homes, more time to making themselves look pretty and attractive, and more time to raising the general cultural level of their lives. Surely we must grant women themselves the right to know best where to look for happiness, and, in spite of the traditional arguments that leisure breeds unhappiness, you do not find these American women rushing to factories and offices looking for work, just because they have bought a dish-washer. One valuable consequence of automation is going to be the ability to opt out of the industrial machine, and I personally believe, although others may disagree with me, that in the long run this is likely to lead to an increase in domestic contentment. It would be a long step backwards even to attempt to ‘put the woman back into the home’, but to give her the option of going back if she prefers it seems to me to be quite different and socially valuable.

**Working Wives**

I doubt if, under present conditions, women really enjoy getting up at six, preparing the family breakfast, rushing the kids off to school, and catching the bus in time to arrive for the eight o’clock shift; and, after a day’s work, rushing home, cooking a dinner, and cleaning the house, while trying to maintain a decent domestic life. Then why do so many do it? Simply because they must, if they and their families are to live at an acceptable standard. If, as a nation, we become productive enough and consequently rich enough to make the man’s wage packet sufficient for the family needs, many women would prefer to go to the hairdresser rather than to the factory.

However, readjusting ourselves to living in a productive and affluent society will bring its own social difficulties. When, for instance, you have a substantial degree of automation, you inevitably have a heavy investment in plant. To run that plant profitably we are probably going to need an increase in round-the-clock shift working. This may well mean that control engineers will have to take their leisure and their sleep at unusual times. And many people fear this might produce less domestic contentment rather than more. But the numbers affected would be small, their hours
short, and round-the-clock shift working for a few men under such conditions would
create many fewer social problems than those produced nowadays by women having
to go to the factory. It is only comparatively recently—within the last two centuries
that women have moved in large numbers out of the home and into the factory and
office, although they have been long accustomed to working hard enough at domestic
crafts and in the fields.

Automation can give a genuinely free choice to women of whether they want to go
out to work or not; and if a woman does the same work as a man she should get
exactly the same payment for it. But if, in the country’s interest, it should at any time
become desirable to limit the size of the labour force, there should be some
adjustment in taxes so that married women have less incentive to work. A woman
may prefer to be in an office, factory, or a school. A career must be her choice, and
she must be completely free to engage in it. And there are many professional
occupations to which women are admirably suited, and in which they are going to be
needed in increasing numbers. But if, as a result of a huge increase in our national
prosperity, we are going to have incomes which enable families to enjoy fairly high
standards of living, I see no reason why the net family income should be doubled
without any tax adjustment merely because husband and wife both choose to work.
We must not allow our thinking to be frozen by the economic and social conventions
of a traditional world of shortage. Automation will allow us to live our lives on a new
and more generous basis.

Shift to the Problem of Distribution
If we pursue automation technology, the centre of our social problems will shift to the
distribution of the riches which we have found ourselves capable of creating. Where
do we begin? On this point, of course, there will be a great deal of argument. The
commonly held view appears to be that automation should immediately bring shorter
working hours. I disagree with this. I believe that working hours may well have to be
maintained at something like their present level for a long time to come, so that the
first to benefit from this increase in our national riches can be those who need it
most—the sick, the infirm, the old, and, of course, the young. Increased productivity
should enable us to increase pensions on a generous scale, and, in time, I see no
reason why we should not bring down the age of retirement too. But we must make
sure those who work are able, with the aid of automation, to produce enough for the
rest of the community. Since automated systems will do most of the work anyway,
looking after those who are not productive will not very much increase anybody’s
financial burden.

We shall probably need to establish some differentials between those who work and
those who do not, but we must reach the position as quickly as possible when
providing for the old will not be regarded as an economic burden and when
consequently they will not be looked upon as outcasts, or a nuisance. Given the
technical means now at our disposal, we must get rid of the out-of-date concept that
only those who work have a right to eat. Over the centuries, we have developed a
complex about receiving money without working for it. We show this by calling such
money charity. But since our new affluence will have been created earlier in their
lives by these very people who are now sick or old, surely they will have earned the
right to live in the comfort produced by the machines they themselves have helped to
build. So one of the first uses of our new wealth should be to increase pensions and to look after the sick and the infirm, so that they are able to lead comfortable lives.

I believe that within twenty-five years automation will have made the old concept of charity obsolete. We may eventually reach a stage where the work to be done will need perhaps only a third of the population to provide fully for everyone and still leave plenty in hand to give generous help to the less technically advanced countries. We shall arrive at a time when we shall need in our labour force only those who are most economically productive; those who are the least able to contribute, the young, women who do not want to work in paid productive employment, the aged and the infirm, all these will no longer be forced by economic pressures to remain in the work stream. If it should be found that the most effective age for people to work is, say, between twenty and fifty-five, it is surely from this age group that our work force should be drawn. To encourage this, our fiscal system could be rearranged to make it attractive to retire early. Heavier taxes could be levied while people are working, in exchange for an adequate income when they retire. There is only one source from which pensions can come, and that is from national production. As automation extends, we could gradually reduce the age of retirement from, say, sixty-five to sixty, and then from sixty to fifty-five and one day perhaps lower still.

**Constructive Approach to Taxation**

I see the need for a much more refined and socially constructive approach to taxation. Tax deductions need not appear as extortions which disappear into some vast official maw, but at least partly as contributions towards providing for one’s own and one’s family’s old age. This will not be a burden if net earnings are sufficiently high. At the present time, we are trying to run a welfare state in Britain on an inadequate national income. To make the welfare state work, and it must, a dramatic increase in the nation’s wealth is essential. And, although it will take time, automation can achieve this for us. Some people view the prospect of greatly increased leisure as a heaven, but there are many who see it as a hell, to be avoided or postponed at all costs. Perhaps the word leisure needs re-defining. Essentially, leisure is non-employment, not as some appear to believe, unemployment. But it is true that if full automation came overnight the first to be forced out of employment would be the unskilled and those performing repetitive tasks, the very people who are least equipped for non-employment.

If there is to be an overall policy on national modernization, as there surely must be soon, such a policy must be concerned with the problems of the transition years during which automation is being introduced. It must take full account of the likely effect on specific types of employment as well as unemployment in general. There is fear of unemployment resulting from automation. It may be exaggerated, but it rests on the hitherto accepted natural law, to which I have referred, that if you do not work you do not eat. Yet to some extent this notion is already becoming obsolete. But money from the state still has the stamp of charity about it. It is felt to be tainted, because it has not been earned. The association between the right to work and the right to consume is strong and deeply rooted. But when we reach a time when perhaps a minority is able to feed, maintain, and supply the majority, it makes no sense to keep in the production stream those who have no desire to be in it or who are unfit for work.
At the other end of the age scale there would be many young people anxious not to enter the productive system until a good deal later than they usually do at present. Their wish would be to spend more of their youth in education and training, with all the benefits this would bring both to them and to the nation. But to extend education in this way would only be possible if we made full use of the productive resources of the nation to supply enough wealth.

Adequate Pensions
I have already referred to the possibility of creating better and earlier retirement income through a more constructive system of taxation. Is there any reason why people should not retire while they still have time and health left to enjoy the world around them? Pensions are now calculated on the expectation of only a short period of life after retirement, and yet how many people welcome the idea of freedom from working? How many would prefer to retire at fifty rather than sixty? Is this due only to fear of the economic consequences? This undoubtedly looms large, but it is surely the fear of not knowing what to do with oneself, of being socially unwanted, on the scrap-heap and useless, which causes the greatest fear. If the retired, non-employed person attempts to live among people who are still working, and therefore leading a totally different life, he is very likely to feel socially inferior and a parasite. He sees new houses being built for young married couples. He sees them busily engaged in bringing up families and doing jobs he was once capable of. To deal adequately with this kind of neurosis will require a change in our social attitudes and a change in national policy. For instance, it is illogical to plan on the basis of unemployment pay being the same for a man of thirty as non-employment pay for a man of sixty. These are entirely different problems and should be tackled as such. A young man who is fit and well requires different treatment, should he become unemployed, from a man in his late fifties and sixties who is in poor health. The one needs to be adequately supported, and possibly retrained to fit him for suitable work, and the other might prefer to retire from the labour market, in dignity and with an adequate pension.

At present, most people are undoubtedly afraid of retirement. They believe that the moment they retire their standard of living will go down. They are living in houses they dare not leave. They may have lived there a long time, and the very thought of moving to a new environment frightens them: it is associated with a worsening of their standard of living, not with an improvement suited to their age.

Housing for the Retired
But once automation has given us the necessary wealth, in addition to making a comfortable retirement financially possible, we could deal with the housing and social life of retired people in new ways. So far, for instance, we have built houses on the assumption that the mass of the population will always have to live close to factories and urban centres. But once we accept the principle of much earlier retirement, the situation changes. One possibility would be to establish retirement resorts in country districts and in coastal towns, new resorts specially designed to attract and to cater for retired people of modest means. These housing schemes could be promoted and subsidized in exactly the same way as housing schemes in those areas to which labour has to be attracted. For less money per house than we are now spending in urban
centres, we could create in Cornwall, say, in Devonshire, or Cumberland, or Scotland, communities of pleasant and suitable houses, with larger gardens than is possible in congested industrial areas, and with a great deal more peace and safety than you can ever get where industry and commerce set the pace. And I know from my conversations with industrial workers that a bungalow by the sea or in the country is what a high proportion of them dream of for their retirement.

The retirement resort could provide houses with no stairs and an absolute minimum of housework, with the right kind of medical and nursing services and with a good range of clubs and community centres, managed, perhaps, on a ‘help your neighbour’ basis. There could be residential guest centres or hotels within each community, so that people could come and visit their relations without becoming in any way a burden on them. This would keep families in touch with each other and permit grandparents to see their grandchildren, while the town-based children would be given a chance to experience the pleasures of the countryside or beach. And, of course, with good transport and cheap fares on the railways at non-peak hours, it would be possible for these retired people to go to the less attractive industrial centres to see their families and old friends when they wanted to.

These are just some of the ideas it seems to me we ought to be considering as a way of preparing for the conditions only just ahead of us. Once we are able to assume adequate national wealth, the social possibilities become endless. Retirement resorts may appear absurdly romantic, but I believe they are a cheap and practical way of dealing with a real and urgent problem. Retired people go on occupying houses that are wanted for others who have to be on the spot because of their work. There is much physical and mental distress because the amenities provided for the aging are wrong or largely non-existent, and because the pace of life in modern cities is too great. Their children feel burdened, particularly when sickness occurs, and most important of all, perhaps, a guilt feeling develops because everyone around them is working and therefore leading an entirely different form of life in which they themselves cannot share. In new resorts of the kind I have been describing, these strains would not exist and retirement could be thoroughly enjoyed. On top of this, we should be making a constructive contribution to the problem of housing in industrial areas. My suggestion would free many houses near to factories just where they are wanted.

A First Dilemma of Principle
We must not day-dream of affluence unless we are seriously determined to create it. It will not come by itself. In the nineteenth century, if we needed quantities of cheap goods, we made use of a great deal of hand labour, but this is a completely out-of-date recipe now. The only way of achieving a massive production in the future is to use automated machines, not human beings. This is the way open to us nowadays and we should do all we can to make sure it comes sooner rather than later. We have the technical knowledge to achieve this on a scale to which we are so far unaccustomed. The first dilemma of principle we are likely to find ourselves in may be to decide whether, under pressure from the unions, we should in the first instance reduce working hours even further or devote some part of the output of automated labour to looking after those who are in need of help. People’s usefulness to society varies with the use to which you put their labour, and one of the purposes of good government is to help each member of our society to make his optimum contribution to our national
life. A constructive social policy is impossible without at least a crude indication of the optima which are considered desirable. And these optima will inevitably change as automation enlarges and enriches the possibilities of our lives.

Although we could probably muddle through the next ten years by making minor adjustments as we go along, I believe we shall be running into great danger if we do not use the first part of this period to study most carefully the various possibilities of automation and its implications, and to decide on a course of action which would lead to the smoothest possible transition into this age of plenty. I do not think that anyone has yet produced a blueprint for this, but I am sure it is not beyond the wit of man to do so. But there are certain prerequisites. We must, straight away, register our decision that this country will not allow itself to drift into becoming an underdeveloped, technologically backward island. In spite of the smallness of our country and our lack of raw materials, there ought to be no waverin our determination to remain an important force for good, not only to help ourselves but to be active in helping mankind in general.

**Imagination and the Will to Survive**

Idealism is not dead. People in this country have many valuable qualities, among them tolerance, patience, and a great sense of humanity, and if these qualities can be coupled with imagination and the will to survive, I am sure we shall be able to make a major contribution towards achieving the altogether higher level of civilization and wellbeing which I believe automation is going to bring us.