

# Need Today<sup>1</sup>

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We know much better today than before what the *needs* of mankind are—one of the great developments of modern times is this *consciousness* of human needs and of our duty to do something to meet them. A little over a hundred years ago needs were in a form that you would think would inevitably appeal to all Christians and humane people, and much close to us than now—in the great famine in Ireland for example—none the less, churchmen, politicians, economists and ordinary decent people considered not only that there was nothing that could be done about the famine, but also that it was wrong to try and do anything about it. It was upsetting the laws of economics, and if economics taught us that half the population of Ireland had to starve, that was just too bad.

Now we don't think that any more, and I believe this is a great advance. But apart from what *we* think, the facts are different. The facts are that we are now in a position where—in respect of material needs, in respect of what might be called the simple Gospel needs of feeding the hungry and giving drink to the thirsty, clothing the naked and so forth—the means to relieve these needs for every human being are not only to hand now, but have been to hand for at least thirty or forty years. Nevertheless the hungry are still there, and very little effectively is being done to feed them. It's not because the food isn't there or that it couldn't be brought very easily to those who need it.

Just to give an example of how it could be done—by the stroke of a pen, or two pens—let us say that an agreement was signed today or tomorrow between Mr Khrushchev and Mr Kennedy to abolish all weapons and spend the money on relieving world needs. They could even sign a document to say that from that day on nobody need lack food, because if the agreement was signed there is enough food available—a great deal in the United States, considerably less of it in the Soviet Union at the moment—but enough food is available to relieve everybody of the necessity of keeping stores of food for the current year; and, during the year the food could be despatched. A great deal is already stored in ships which are simply moored because there's no

<sup>1</sup>The substance of Professor J. D. Bernal's Address at the Student Christian Movement's Conference, Bristol, January 1963.

reason for them to go anywhere, and the rest of it is stored in caves for butter and silos for grain. And there is the so-called Bank of Food, that is large tracts of good land which the government pays farmers to keep untilled. Besides that, in one year's time, it would be possible, merely from the products of motor-car and tractor factories which are not now operating to capacity, to provide enough tractors and ploughs to double the food production in all the rest of the world and in the process to relieve unemployment.

We can put it in a different way: we can say that the amount of money spent on armaments to-day is equal to the total national income, not of any one country, but of the combined continents of Asia, Africa, and South and Central America. If you want the figures, arms now cost about 120 billion dollars a year, while the incomes of three continents are 60, 20 and 30 billion dollars respectively. In other words, *if* the money was not spent on arms, and *if*—and this is a somewhat bigger *if*—instead of spending it on arms it was spent on helping the people in the poorer continents, then it would mean immediate doubling of their standard of living. I am not suggesting—and I will come to that—that this is the way it should be done, but just to give you the scale of the problem, to bring out the crude, practical facts, the food is there, the fertilisers are there, and the machinery is there.

But satisfying immediate demands for food is a very small amount of what could be done, because if we look into the possibilities of scientific research on the various types of ways of improving conditions, we see that it is not a question of doubling, it is a question of getting ten-fold or more of these present material requirements within a few years. In fact, the tragedy that the scientist most feels—and quite rightly—is not so much his own tragedy but that of all the world with its enormously greater possibilities than actualities. I have been in a sufficient number of typical underdeveloped countries—India, China, Africa and Latin America—and I have seen something of the conditions of life and production in these countries. This typical picture just comes to my mind: a number of men sitting cutting with little shears on a dusty plain what I would hardly have noticed was grass; sitting, and moving on, and cutting a bit more, simply to feed some half-starved goats and cattle. And this in a country where in fact there was so much water available at the right season of the year, that I've also seen—on the east coast of India—a very large part of the country under water, with every river pouring its precious mud into the ocean.

That, from the crude physical scientist's point of view, is an easily

removable kind of trouble. But if in fact the conditions I have described were possible to remove *economically* as well as *technically*, this Need would not exist. If it paid to provide these people with money to buy the food, they would have got the food. But they have no money and thus do not deserve any, so it does not really pay to provide them with food, and therefore they have to do without. That is the argument that applied in the time of the Irish famine. It is one of the characteristics of all famines—I was in Bengal for a short time during the famine of 1944—that somehow or other rich people never starve. What is lacking, as the economists point out, is not that people just need things, but that they lack what is called 'effective need.' An effective need is that of a person who has got the money in his pocket to pay for what he wants. Of course in a famine prices go up, and naturally you have got to be pretty rich to afford food then. On these strictly economic lines, hundreds of millions have starved and most people still go hungry. But the essential thing is that we have got to find a different way of satisfying need than following the lines of nineteenth century economics. We have to look at the whole problem in that way. I could give very quickly pictures of what science could do, but only in the barest outline because what I think we should be more concerned with is not so much what *could* be done, but what *will* be done, and *how* it will be done.

The most direct use of modern science is the production of *energy*, the common currency not only for all action and movement, but also for the production of all materials, including metals, plastic and food. We know now that we can have all the energy we want, first by splitting heavy atoms—fission energy—and later from combining protons—fusion energy or slow hydrogen bombs. But though these energies will be needed in the long run, just now we could well have waited some time for them. Our scientific timing is not very good—atomic energy was discovered I should say about twenty or thirty years too soon—because, at the time it was discovered, and now, the world was divided in such a way that the great bulk of the new power of atomic energy is tied up in military preparations—which let us hope will never be used. But these military preparations almost completely sterilise atomic energy, except for a very small number of civil power stations, most of which are in this country. But the other reason is that at the same time that atomic energy was discovered, all the old kinds of fuels, particularly oil and natural gas, were discovered to be many, many times more abundant than anyone had thought. This is just another consequence of science; the fact was that before the war

they had had only limited methods of surveying or drilling and no proper understanding of the interior of the earth. We haven't got it yet, but we understand enough to know that the oil resources of the world are many times—probably a hundred times— what they thought to be twenty years ago. And in fact there is now a glut of oil; in quite minute places like Qatar—places that no one had ever heard of—almost every desert is full of oil. It is the nature of deserts to be full of oil because they are depressions in which the stuff has accumulated over geological eras.

There is no shortage of power in the world, and another thing we know from science now, is that power can be transformed into any kind of material goods, particularly into food. It can be done in a very crude way, for in most of the world, the world of the poor, the two-thirds of the world's population suffering from need, live in hot, sunny climates and do not produce more food simply because they have not enough water. It includes an enormous desert belt stretching from the Atlantic to the Pacific. It was al-Masudi, I think, who rode the whole way from Morocco to Peking in the tenth century, and only met fertile country when he crossed the Nile. Some of these deserts, like the Sudan, are hot, others like the Gobi are cold, but all could produce as much food per acre as Britain if they could only get water. With electric pumps inland and de-salting stations on the coast, water could be turned directly into food. More direct methods will certainly come. There is a proposal to produce protein in quantities of millions of tons from the bacterial breakdown of paraffins in crude oil. This would be enough to top up the protein ration for all the peoples in the less developed countries and thus deal with the major present cause of malnutrition.

In similar ways all other physical needs could be satisfied—materials like metals can be made, and as for the most useful, steel and aluminium, this globe of ours is more than a quarter iron and one-eighth of it aluminium—so there's no shortage of metal—it has only got to be reduced from ore to metal with electricity—with power. And if you did not want to use metals, you could make unlimited quantities of plastics out of air and water. All these goods have been limited in the past because of the shortage of power. Now we could have as much power as we can use, so power will become like air. (No one has worked out how to make a profit out of breathing air—there was too much of it.) But we will reach that situation: countries will have as much power as they can consume. Yet it is not safe to consume too much for it would lead to rather unfortunate results. For all the power you have put in

comes out as heat in the end, and if we doubled power every five years as we're tending to do, you'd have to fit the earth with a radiator to get rid of it. Otherwise it would warm up, which would be disastrous because it would melt all the ice in Greenland and the Antarctic and flood, for instance, most of England, if not Wales or Scotland.

But without going to these extremes, which are feasible and could and may be seen quite soon, there is no longer any need for material scarcity whatever. This reverses all the basic ideas of economics—economics was always described as the science of *scarcity* and it was right to do so, because before there was sufficient knowledge, there was real scarcity. Now, all scarcity—and this is really the most important thing—all scarcity, all felt need in the world, is henceforth due to human interference, human stupidity and human greed. The means are there, the knowledge is there, and what is needed is the will to apply it. The difficulty is a human difficulty and not a material difficulty.

There is, too, another change which is much more important than abundant energy, more so than atomic energy or thermo-nuclear energy, and that is the invention of the new automatic devices, the new substitutes for intelligence—the dullest part of intelligence. The old Industrial Revolution, in a very limited way, relieved men, and women too, from heavy toil, from driving piles, from pulling tubs of coal along mine run-ways. All this was not necessary once the steam-engine and later the internal combustion engine had been invented. But the advent in our time of the new electronic devices, the computers, the automatic and cybernetic devices, removes the necessity for all dull mental work. All the adding of columns of figures, all accountancy, all administration, all typing, printing, can be done very much better, and will be very rapidly passed over to electronic devices. We are moving into an age when skill and not mere force has been made automatic. And that means a relief of man from all strictly inhuman occupations. Once there was a steam-engine, it was silly as well as wrong to put a man on a tread-mill; but it is equally wrong now to sit him at an office desk adding up figures. The new electronic devices are going to transform the world and we must face the complete alteration of our way of life which will be brought about by removing the chief evil of the modern factory system—machine minding. Any job that is dull and repetitive can be better done by an electronic machine than by a human being and better and far quicker than the dullest, the most conscientious human being could possibly do it.

The brain is an extraordinarily elaborate organisation. It has about ten

million, million cells, and it is much more complicated, has a much better memory, and can do all kinds of things that no machine that we can think of today can do. But, it works very slowly. It thinks at the rate of a hundred thoughts a second. We used to say as fast as thought, but anyone who deals with electronic machines, will say *as slow as thought*. While the man is thinking his thoughts in a hundredth of a second, the machine has run through roughly a million thoughts, because it works in hundred-millionths of a second. And it can do very more: it can look at many more possibilities; one of the primitive machines for instance, called Leo, which J. Lyons & Co. Ltd. the caterers, had the cleverness to buy in the paleolithic period of about ten years ago, pays the salaries, with all the deductions and allowances of all the employees, keeps the records of all the Swiss rolls sold in all the shops, and is able to see that they don't go to the wrong places and are not allowed to go stale. You couldn't do that with human beings, but the machine does it and does it in half of its time. The other half, and I have reason to know this, is sold to scientists to do odd scientific jobs with. This is just one early example of the biggest transformation, much bigger than the old Industrial Revolution, that is in principle, of how men are to be freed from the need to do dull work.

But even these developments are not the most important that have come about in our time. More important than these is *the knowledge of knowledge* itself: the knowledge that if you don't know the answers, you know how to find them out, and this is shown in the other aspect of human affairs, one that affects all of us as individuals—the questions of health and disease, the questions of life and death. We have seen already the primitive stages of enormous transformation—the curse of diseases like diphtheria and tuberculosis have almost entirely disappeared. The chance of a child dying between the ages of five and eighteen are practically limited to road accidents, the major cause of death for this age-group. Disease has disappeared from youth, and is disappearing from middle-age. It has not yet disappeared from old age. That is because it is a more difficult problem. We can defend—Pasteur started it—the human organism from simple, external enemies like bacteria. We can do a little more with rather more subtle little enemies like viruses—diseases like measles are on the way out—but we haven't been able to touch the diseases that kill old people, bronchitis, heart diseases, cancers and so forth. We could of course already do a great deal more with our knowledge than we do. We could for instance stop poisoning people simply by the sulphur-dioxide we are putting into the air from factories

and power stations. We are killing thirty times as many people—mostly elderly people—in this country as in Sweden from bronchial diseases, pneumonia and so forth. All these are unnecessary: one can say, by and large, that individually *most deaths are murders*, murders that are brought about by conditions imposed on people, very subtle murders—it's hard to catch the murderer. Those deaths that aren't murders are suicides, and these are more difficult to detect because they are suicides which are strictly caused by ignorance. We are all eating and smoking and doing things which will bring about our premature deaths; but we do not know, out of the things we are doing, which are the wrong ones. And so we are in that sense guiltless of suicide. But our society isn't guiltless, society is just as guilty as if it were the individual cutting his own throat. Society is seeing to it that people are committing suicide because it is not trying to find out the means of preventing it. If you have a factory and you have an exposed belt, you may say it's up to the man to avoid that belt, and if he gets caught up in it it's his own carelessness. But that's not the view of the factory inspector: the law says we cannot blame a person for his carelessness, the factory owner has got to put a protection on that belt. And the protection we need to have for everybody is to find out how to stop evils that we accept as necessary, those evils that our state is too lazy or too mean to buy enough scientific research to stop. It's only this year that the first piece of organised basic research on heart disease, which kills one-third of the people in this country, has been properly started.

Now all these advances in power, in automation, in medicine, are of the kind that will happen in England or in Europe, but—and this is my main purpose—what about the great majority of the human race, what about the people in all the other parts of the world? They are placed very differently. The things that happen to us in the way of a better life, cannot happen to them. Their infectious diseases have been, to a certain extent, dealt with, but the other main things—the spread of education, the even simpler provision of food—have not been dealt with. And this is the real problem, how to deal with it in the present-day world, how to achieve for everybody what only the favoured few have achieved. And people all over the world now see that and know what they are missing. It is very creditable that we know it ourselves; it would be more creditable if we knew what to do about it and were set about doing it. The fact is that in the past people had no moral responsibility for what happened beyond the bounds of their own village or town. Everybody and every community had to look after

itself. Transport was difficult, and you could not get the stuff around. If there was a famine in one province, it was the business of the other provinces to keep their food and not to waste it on the other people. But now we realise that we are in a world that has got this general moral sense of everyone being responsible, and feeling responsible, for the whole population of the world. And the problem is to turn that felt responsibility, that moral responsibility, into an effective responsibility, so that something is actually done.

A number of people have gone into this question, and we all know of the work of the Food & Agricultural Organisation of the United Nations. Besides, a large number of pioneer investigators like Josue de Castro of Brazil, Dumont in France, and Lord Boyd Orr here, have really gone round to the places where there is present hunger, and looked into the farming and know what should be done. But we must realise that what has to be done first and foremost is a social and economic action, rather than a technical one. Put it this way—this is the way in fact in which it was put by Professor Mahalanobis, the statistician who looks after the affairs of India, recording the lives and deaths of four hundred million people—supposing you have another fourteen million to be fed—as they have in India every year—you will need food for them. What can you do? You could buy the food for them, but you can't pay for it, though with luck you can borrow the money and buy the food. Then at the end of the year the food will be used up, there'll be another fourteen million people and you have to buy twice as much food for them for the next year. It would be better if it was given to them—it's charity, but it doesn't get you any further. All right, instead of that, you buy fertiliser; practically the whole of Asia and Africa and Latin America use hardly any fertiliser at all—not because they don't know about fertilisers, but that they cannot afford them. So you can buy fertiliser—it wouldn't cost as much as the food, though it would cost a good deal, and again you would produce the crops, but you would need more fertiliser for next year. You can go a step further: you could buy the factories to make the fertiliser. I.C.I. is prepared to sell you a factory for, say, twenty or thirty million pounds—two years delivery—and to a certain extent that's been done. But what you've really got to do is to take the last step further back—you have got to get an engineering industry and a steel industry so that you can build your own factories for your own fertilisers and your own tractors.

This is even now recognised by such a direct organisation as Oxfam:



they spend ten per cent of their money on such devices for helping people to help themselves. But no Oxfam, no pennies, are going to provide enough to industrialise about two-thirds of the world which still needs to be industrialised. And this is the problem. How can it be solved? At the present moment, and this is a mystery which only the economists can explain, throwing money away is very widely practised: take the figure I've just given—120 billion dollars, or if you prefer, 40 thousand million pounds, is thrown away every year on armaments. These armaments—of course very happily—are not much used for the moment. A few rifles may be used here and there, and an odd machine gun, but the big stuff is left there until it becomes obsolete; and it's becoming obsolete faster and faster. They're even obsolete before they're made, like the Skybolt. Nevertheless, the money's all gone. Now why is it—and this is what the economists must explain to us—economically right to waste money that way on armaments and economically wrong to waste money on providing factories and things to enable the people of the world to get some food?

The fact remains that it is so, and that in the ordinary political way you will find every parliament in Britain or the United States will always vote the military credits of more than ten per cent of the national income unanimously or nearly so, or turn out of the party anyone who does vote against them; and as for spending on the need of the underdeveloped countries, they will be prepared to talk about raising one per cent for them, though in fact they don't even do that. In fact, the idea that you could take the money spent on armaments and spend it on answering human needs, is much too crude—you couldn't do it all at once, it would be too much—they are too poor to take it. It would be like feeding a starving man a three-course meal. Forty billion pounds is about ten times more than you could possibly spend at the outset on helping the underdeveloped countries. I would suggest a very cautious, intermediate kind of operation: reduce armament expenditure to a third—give less than a third to underdeveloped countries, and keep the rest of it for capital expansion and for welfare or tax reduction in countries like this. You would then be able to provide for all the immediate needs of all the continents of Africa, the Middle East, Central and Eastern Asia—the whole underdeveloped world.

I worked out, not so long ago, a kind of balance sheet for the world, but I made some bad mistakes for reasons I didn't understand at the time: I put down for Latin America, which ought to be an extremely rich part of the world, full of mines of all kinds and wonderful possibilities of agri-

cultural produce that they would only need about 200 million dollars foreign credits. In fact, they get more than that now, but the amount exported as cash to Swiss banks by wealthy people in Latin America is more than the credits that go into the country. The peoples of Latin America are getting poorer and poorer. The fact is that most of that part of the world is still what we may call a mediaeval or feudal state; the land is owned by very nice people—but in Chile, for instance, which is one of the richest parts of the world, you see not only all the peasants with ox-carts, but many of them have solid wheels of a kind that went out in Europe two or three hundred years ago. And they thresh just as in the Bible, on an open piece of ground with the oxen walking on the corn; no combines for them, no tractors for them. And yet the country produces an enormous amount of wealth. Where does the wealth go? It goes straight out of the country. The mines of all kinds are owned by foreign companies; all the minerals go out and all the profits go out of the country in dollars. I would not say that nothing is left for the people, the people have the right to work in the mines and plantations—otherwise they would be unemployed. This is the kind of combination of native landlordism and foreign exploitation—the major impediments to national self-sufficiency—which perpetuate need. I know this very well because I was born and brought up in Ireland—I know what landlords are like. The Irish landlords were even nicer people—they were wonderful in the hunting field and at shooting, fishing and the few things gentlemen could do, and they did not oppress the Irish unless they were so ungrateful as to rebel, they liked them, but they were unable to do anything for them after they had collected the rent.

The first thing to do to set people on their feet is to see that they are in a position to help themselves, and that means in the first place political *freedom*. In the last few years a new continent has been coming in to the human community—the oldest continent—and to-day Africa has very largely gained its political freedom, almost completely so except for the Union of South Africa and Angola. Sometimes it got it relatively easily, sometimes it had to endure a murderous war of independence such as the brave Algerian people had to suffer. Nevertheless most countries in Africa got their political independence, but they haven't begun to get any real economic independence. I know how difficult that is. In Ghana I saw something of the efforts to get that economic independence and the difficulties put in its way. But of course in a world organised the way it is, it's extremely difficult to get away from the network of vested interests that control trade and finance. All

these countries depend for their very existence on what they can get for their raw material exports. Ghana for example lives on the price of cocoa; if the price of cocoa goes down the country is ruined, if the price of cocoa goes up they can afford a few more schools. But neither the people nor the government of Ghana can control the price of cocoa—it is controlled elsewhere by very good and nice businessmen who must think first and foremost of their shareholders' interests. The two things which all underdeveloped countries most need are to be secured against the export of capital from their own countries when they really need to import it, and to control their own export prices. At present there are a set of Balkan states in Africa, where you can hardly move a hundred miles without going from one kind of country to another—they're all free, but one is effectively still part of the French Empire, another of the British Commonwealth and so forth. Each is technically quite independent, but keeps the habits of the home master-country. If you go from Ghana to Togoland, for instance, you have to cross a frontier in which one frontier guard wears a kind of British policeman's uniform, the other (and they happen to be cousins) wears a French kepi—the tribes have just been cut up like that. There is a clear need for a really effective United States of Africa which has its own Common Market and can control its own prices. It has been done, but when there were a set of foreigners owning the country, for instance owning all the rubber in Malaya and the Dutch Indies. But it is far more difficult for dozens of weak governments in small states all at sixes and sevens with each other, and so the peoples stay poor and the governments cannot plan to develop their resources for their own benefit.

One of the first things for those who want to help their neighbours to do is to understand and to read for themselves and to try to find out what the situation is. Responsibility for one's neighbours is rather different now from what it used to be. There's a new kind of responsibility which is a responsibility to know and to act according to the best of one's knowledge. It's too simple to say 'here are some people who haven't got anything to eat, let's give them something.' That's only a first step—a very good first step, but it's only a *first* step—we have to *know* what the situation is, we have to learn that, effectively, the people who are going to grow the food they eat and make the clothes they wear, are the people in the countries themselves. But they have to be helped and that help must come, at first, partly from outside and it is only later that they will be able to pay their way unaided.

There is an enormous need for education in these countries, and here Britain has a special responsibility. This set-up was largely a product of the British rule in India, in Africa. The monuments of Africa are very strange—if you go to the oldest building in tropical Africa, Elmina, where the Portuguese built a prefabricated castle in 1482, you can see an elegant building in the best seventeenth century style—it looks like a Dutch picture by Vermeer. But what is this beautiful building? It is a slave market, and underneath are the caves where the slaves were held until the ships came round to take them off. The whole of Africa was mined for people to send to plantations and their descendants are still alive. It's a hundred years since the slaves were liberated in the Civil War in the United States, but they're still not in the same position as the original white settlers, not to mention far later emigrants and their descendants. All the evils of slavery came about from the past actions of our ancestors. Therefore we have a special responsibility to get rid of it. As I said, the first part of the responsibility is to study it, the second part of it is to act in our own countries, not only nationally but internationally, and to see that this kind of bad situation is replaced by a better one.

One of the special aspects of modern civilisation is means of communication, television, films and so forth, the printed word. People in Africa and Asia now know very well what they're not having; and what they can't see—and they're quite right in not being able to see—is why they shouldn't have it too. They don't want to wait, as Africans have had to do in the United States. They were told to wait until it all comes right of itself, but a hundred years is rather a long time to wait, and they don't want to wait any longer, and there is no reason why they should. If we all saw to it, if we all got together and discussed and worked out what should be done to see that the whole world became a world of people on the same economic and cultural level, we could achieve it. We've gone part of the way, although I know there are some people in backward countries like the Southern States of the U.S. or in South Africa who don't agree with this, but the myth of racial inferiority is really not held by any reasonable people. Let us draw the corollary—if there's no racial inferiority, then we should set ourselves as a job, as a planned operation, to see that the effective depression of living standards, the effective deprivation of food, health, of the means of working, of education as well as of contributing to world culture, which is now the fate of two-thirds of the world's population, are all removed as rapidly as possible. And the main burden of

what I have said, is that the speed can be very great indeed, a generation or two at most. Given the will we could do it.

So far I have been talking about the world as if it were one place. We know very well that the world is deeply divided. The essential factor that at the moment is holding up this operation of lifting the condition of the under-privileged peoples of the world up to the highest level is the mutual hostility of peoples which is now focussed in the simple hostility of the Cold War. But at long last men are beginning to see that the Cold War is something which is not intrinsically necessary, and which is already beginning to melt out. Even if we feel, as we felt a few months ago over Cuba, that the Cold War might develop into a hot war at any time and that none of us might be here at all, I think that lesson showed up to some extent the unreality of the whole thing. Why is the Cold War such a danger? It is not only just the money that is spent on it, it is the attitude of mind that considers success in the Cold War is more important than helping the people of the world to achieve their own possibilities. That is one part of it—we've got to get together to stop the Cold War, we've got to think out a scheme for letting the whole world raise itself.

I have been enormously impressed, especially when I've been in Africa, Latin America and most of all in China, at the great potential there is in all these countries—the human potential—the avid desire for education, the way in which people knock up their own bush schools. In a place up in the country in Ghana called Bolga-Tanga, they have very nice round hut-systems made of mud. The hut is made in the traditional way, with the mud beautifully smoothed over and polished, and covered with a special kind of paint, but on all this paint when I saw it, were drawn in chalk, alphabets, multiplication tables, maps of the world, little sentences by children who a year before knew nothing of book-learning. It was the children living there who were doing it. They had found a home-made blackboard for themselves in the houses they lived in. I have seen very much the same in little village schools in the remote parts of China and in India—that desire multiplied millions of times will bring education to all. I remember in 1946, which now seems a very long time ago, there was a big conference in London on education in Asia, and a former director of the Indian educational system pointed out that it would take two thousand years for elementary education to be achieved in India. India was a poor country, the British had been there for two hundred years and only ten per cent of the population had learnt to read. At that rate, therefore—a rate which

you could hardly expect to improve on—it would take a thousand years to finish the job. But the people of India aren't going to wait for that; they're going to do it themselves. What we've got to do is to let them do it, to remove the obstructions that are preventing them from doing it; and in doing that we achieve two things—for ourselves as much as for them.

We begin to understand that it is extremely difficult to be moral in an immoral world. It is extremely difficult to accept the morality of that hymn—especially the verse which is no longer in the hymn-book: 'The rich man in his castle, the poor man at his gate, God made them high and lowly. And 'stablished their estate.' We've got away from that kind of thing. In the same way you cannot really achieve personal morality in a world where it is possible to relieve all human want and misery but this is not done. In the past you could accept it because there were no means to alter it. The difference in morality now is that we have the means to alter it, and if you don't find out what they are and don't do anything about it—you're responsible, though you may not have been responsible before. It's the distinction between ignorance and invincible ignorance: if you didn't know something was a sin, then of course you couldn't be guilty; but if you deliberately took pains not to learn whether it was, that was an ignorance which was itself a form of guilt. Our duty therefore nowadays includes first the understanding and then the changing of the world we live in. I would prefer however to look at it as a purely human consideration: I see in these nearly three thousand million people there are in the world enormous potentialities; I see the enormous possibilities for human development, for thought, for science, for poetry, which is stifled at the moment by sheer poverty. And I want to see mankind realise its full potentialities.