

REITH LECTURES 1967: A Runaway World

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Lecture 1: Men and Nature

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Men have become like gods. Isn't it about time that we understood our divinity? Science offers us total mastery over our environment and over our destiny, yet instead of rejoicing we feel deeply afraid. Why should this be? How might these fears be resolved?

In the last analysis fear is always fear of the unknown, the threat of confusion. But this threat has many faces which alter as we change our talk. At one level, in public affairs, we call it the problem of law and order'; at another we see it as 'class struggle' or racial violence' or 'the ill discipline of youth'; but deeper still, in our private feelings, we worry about attitudes —the problems which are conjured up by words like 'detachment', 'objectivity', 'alienation'. All these expressions share a common element, a seedbed of fear: that common element is separation.

It is all part of a game which we were taught as children, the trick of language which takes people apart and puts them in their proper place. By using names we can put each of the countless things in the world into its proper box, separate, by itself. Living things are different from dead things, animals are different from plants, men from apes, adults from children, white men from black men, workers from bosses, myself from others. Words order our experience by keeping things apart. But this kind of order quickly leads to a sense of helplessness: for what am I but yet another single, lonely, isolated thing at the mercy of all the rest? But if we were not human and helpless, we should be divine and omnipotent. What could we do then?

Suppose you were a god, what kind of freedom would you then possess which is denied to you because you are a human being? Men are subject to destiny: gods are not. Gods can intervene and knowingly alter the course of history; men can only experience what happens. Things happen to us: we do not happen to things. But although gods have free will, they are not detached. Gods are creators but they are not separate from what they create. Gods are not subject to natural laws, they are the laws. They are immanent as well as transcendent.

What I'm getting at is this. We are accustomed to think of our human position as that of a passive spectator. We look on with amazement at the ever more subtle complexities of nature which the triumphant scientists display before us. We are eager to dig deeper and deeper into these mysteries. Yet we remain apart, alienated, detached. The scientist sees himself as explorer, not as creator. He takes it for granted that we must accept the rules of nature as we find them. He refuses to act 'like a god'.

But this detachment is an evasion of responsibility. Nature has not been fixed once and for all; nature is evolving. Science can not only show us how things are now, and how they have come to be what they are: It allows us to determine what shall happen

in the future. Even the wildest fancies of science fiction are not far removed from possibility. If we so chose we could participate in the processes of nature in a quite unprecedented way and fashion a world to suit our own convenience. Why then are we so reluctant? If we've got so much power, why do we feel dominated by events? Why do so many of us talk as if the advancing sweep of technology were a natural catastrophe beyond all human control?

If you ask a professional scientist that question he will probably simply reinforce your alarm by insisting that genuine human control is impossible. The argument runs something like this. .. Belief in human free will is an illusion. In almost every situation that you or I might possibly encounter, we should already be fully committed, by genetic endowment or by the habits of past experience, to act in a predictable way. And even if this were not so—even if you could genuinely 'decide for yourself' what to do next—the choice could never be fully rational, because the long-term results of what you do will always be vastly more complicated than you had ever supposed. That being so, the wise man must avoid all involvement in practical affairs; only by detachment can he hope to gain true understanding. That last sentence is a Buddhist precept, but it also summarises the basic philosophy of our science-laden society: all true science must aim at objective truth, and that means that the human observer must never allow himself to get emotionally mixed up with his subject-matter. His concern is to understand the universe, not to improve it. Detachment is obligatory. It would be wrong as well as foolish for any scientist to accept responsibility for the practical consequences of his investigations. It is not the scientists' fault that we are threatened by the bomb.

We have all heard something like that before. But somehow it doesn't seem quite right, not even to the scientists themselves. The catch in the argument is that the detached objectivity of science is largely make-believe. Scientists don't just discover the truth once and for all: their discoveries have consequences which alter the state of the world, and the truth is then no longer what it was. Whether he likes it or not, the observer is always bound to get mixed up with his subject-matter. That being so, wouldn't it be more sensible to adopt a rather more subjective attitude to the whole business?

Why must the long-term consequences always be left in the lap of the gods when we are so near to being gods ourselves? We don't know everything, but certainly we know a great deal. Why can't we have a science in which someone or other is prepared to take a personal view of how things ought to be and then try to bring it about? And let me be clear: I mean science, not engineering. It is not a question of whether we can plan road systems and cities; of course we can. I am talking about something much more fundamental. Are we prepared to tamper with nature itself—consciously and systematically? Can we accept responsibility for changing the lifespan of individuals, for altering the genetic endowment of human beings, for restructuring the balance of competition between all living things? Are we prepared to *plan* such changes instead of just causing them to come about, at random and by mistake? We can't evade such questions for ever, though we shall need a great shift in all our political, religious and educational attitudes before we can arrive at sensible answers. Meanwhile orthodox opinion leans entirely the other way. Official science is fully committed to the principle of muddling through and not looking beyond the tip of your nose. All past experience, it is said, teaches us to take only one step at a time.

Science should only concern itself with problems which have an answer. It is quite respectable to conduct intensive research into ways by which the sex of children might be predetermined, but it is not the scientists' business to speculate about how this discovery might affect the future of mankind.

The reasons for this 'leave-it-to-fate' attitude are very complicated. There is an element of safety first. No one wants to shove his neck out and then prove to be wrong. But part of the story is that scientists are inclined to look upon historical change as an evolutionary process and, in their eyes, evolution has now acquired the status of a theological principle.

A century ago, Darwin and his friends were thought to be dangerous atheists, but their heresy simply replaced a benevolent personal deity called God by a benevolent impersonal deity called Evolution. In their different ways Bishop Wilberforce and T. H. Huxley both believed in Fate. It is this religious attitude which still dominates all scientific thinking about future development Darwin's ideas belonged to the same phase of 19th-century thought as *laissez-faire* economics. But if the natural processes of evolution must in any case lead to the survival of the fittest, why bother? Conscious intervention by clever men can only serve to make things rather worse. It is surely much better to stand aside and just watch what happens?

But anyway the real crux of the matter is that the ideals of objectivity and detachment provide an excuse for steering clear of politics. A generation ago the Russian plant-breeder Lysenko imagined that he could mould the processes of evolution to meet the needs of the Soviet economy. He was unduly optimistic, but at least his theories were in accord with the principles of Marxist-Leninism. And precisely because he was not detached, Lysenko never had any doubt about the rightness of what he planned to do. By comparison a British botanist would be wholly at a loss. Suppose, for example, that by altering the climate we could make vast areas of the Sahara and of the Sub-Arctic available for the production of low-grade food crops, are we unhesitatingly certain that we should want to do such a thing? But fortunately that would be a political question, so the detached scientist does not have to worry! Somewhere along the line, this kind of evasion has got to stop. The scientists can't always expect to opt out of the tough decisions.

All of us need to understand that God, or Nature, or Chance, or Evolution, or the Course of History, or whatever you like to call it, can't be trusted any more. We simply must take charge of our own fate. We must somehow see to it that the decisions which have long-term consequences are taken by men who understand what they are doing and not by bewildered amateurs. And it could be so. Change need not always be something that happens to us; it could be something which we choose to bring about.

But do not let anyone underestimate the extreme moral difficulty that any such godlike attitude to scientific knowledge must entail. Consider, for example, that very topical problem, the world population explosion. It is nearly always discussed simply in terms of food resources and Dr Malthus, but the real Issues are far more complex. At first sight the facts look fairly simple. All over the world populations are rising and towns are growing; the rate of change is very fast and still accelerating; the consequences for our children and grandchildren look bleak and hungry. The fact that

previous demographic forecasts have always turned out to be wrong doesn't really help. The arithmetic errors only modify the time-scale. There may have been brief periods in the fairly recent past when the total world population has declined, but these were very much the exception. However much you fiddle the figures, it is quite certain that the long-term trend has always been up and up. And it is also certain that if the human population goes on increasing continuously at anything like its present rate, then social life as we now know it will rapidly cease to be possible.

Now the fact that we are aware that this is what might happen, and that we have the technical ability to prevent it happening, poses a moral problem of an unprecedented kind. We could act like gods. Should we do so? Suppose, for the sake of argument, that we did collectively decide to limit the world population, what criteria should apply? Most of England is much more densely populated than most of India, but India is just now engaged in a campaign to limit population growth while we offer tax incentives to encourage large families. Which of us is right? How could we decide? The circumstance that, in the future, social life as we now know it may be impossible is irrelevant. The human species is very versatile. Over a long period it has been evolving new types of social- organisation which permit denser and denser aggregates of population; at each stage in this process the people concerned have very quickly adapted themselves to the idea that this new style of living is normal and comfortable. If you could go back about 12.000 years you would find that no part of the human race was living at a density of more than two or three to the square mile; today some members of identically the same species feel comfortable in skyscraper flats at densities of many thousand to the square mile. Where do we stop?

This is a value problem, not a food problem. If human beings were content to live on a diet of modified plankton, I suppose that it would be scientifically feasible to have ten or twenty times as many people living on the earth as there are now, but they would have to live their lives in an entirely different way under conditions which all of you would consider perfectly horrible. And yet, if that Brave New World actually came into being, its inhabitants would think that everything was perfectly normal. This strange form of existence would correspond to what they had been taught to expect. They would enjoy living that way. Have we, then, any moral right to interfere?

Well, what do we do about it? Do we just allow events to take their course and hope for the best? Or do we try to tamper with destiny? We could set a limit on the total human population: ought we to try?

The wisdom of past experience says: 'No. What actually comes to pass will not be what you now expect; if you alter the course of evolution, you will only make matters worse.' Well, fair enough: we certainly should not imagine that we could ever fully control the future. Whatever we do, history will still be full of surprises. But does this really matter? Surely anything is better than just being left out in the cold—scared stiff of what is coming next? By participating in history instead of standing by to watch we shall at least be able to enjoy the present. The cult of scientific detachment, and the orderly fragmented way of living that goes with it, serve only to isolate the human individual from his environment and from his neighbours—they reduce him to a lonely, impotent and terrified observer of a runaway world. A more positive attitude to change will not mean that you will always feel secure, it will just give you a sense of purpose. You should read your Homer. Gods who manipulate the course of destiny

are no more likely to achieve their private ambitions than are mere men who suffer the slings and arrows of outrageous fortune; but gods have much more fun!

All right, then: let's pretend. If you were a god and you could alter nature, what difference would it make? How far would you have to change your style of thinking in order to get thoroughly mixed up with everything that is going on? In my later talks I shall keep on coming back to that question. How far is the barrier that seems to hold us apart from the changing world only a matter of language and attitude? Is it that we are afraid of nothingness that is, of standing alone in empty space— or simply of nothing at all? Is all our panic just a by-product of false expectations?

One of our fundamental troubles is that we in the 1960s—particularly, I think, we British—take it for granted that there is something intrinsically virtuous and natural about law and order. It is this expectation of orderliness which generates our fear of anarchy and which thus, in a world of accelerating change, creates a panic feeling that things have got out of control, but if we were logical, it would be order, not chaos, which would now fill us with alarm. An orderly world is a world governed by precedent nicely organised to cope with facts we already know. That would be fine in conditions of technical stagnation, but in the context of a technological revolution orderliness is simply a marker of how far the members of society have got out of touch with what is really going on.

This all-pervasive reverence for law and order has a bearing on what I was saying earlier about the scientist's devotion to objectivity. In the world of science different levels of esteem are accorded to different kinds of specialist. Mathematicians have always been eminently respectable, and so are those who deal with hard lifeless theories about what constitutes the physical world: the astronomers, the physicists, the theoretical chemists. But the more closely the scientist interests himself in matters which are of direct human relevance, the lower his social status. The real scum of the scientific world are the engineers and the sociologists and the psychologists. Indeed, if a psychologist wants to rate as a scientist he must study rats, not human beings. In zoology the same rules apply. It is much more respectable to dissect muscle tissues in a laboratory than to observe the behaviour of a living animal in its natural habitat. If you inquire from the scientists themselves as to why they have these valuations you will find that it is the regularity and order of the physical sciences which are admired. The biological sciences come to be respected precisely in the degree to which they can make exact predictions. Conversely, the social sciences and the practical men are condemned because they are imprecise and because they are 'not sufficiently detached'. The underlying psychology here is complicated. The scientists are engaged in exploring a changing universe but they are frightened, just like the rest of us, by the idea of a changing society. So they try to keep scientific activity and social activity apart and pour contempt on those who get them muddled up. Good science is 'pure' science and must on no account be contaminated with real life.

At another level the craving for certainty and detachment is a survival from the religious dogmas of earlier centuries which affirmed that the order of nature had been fixed once and for all by a single act of divine creation which had ordained, from the start, that the human species should be uniquely different Man, who was fashioned in God's image, has reason and free will: all the rest is mechanical.

The human observer stands apart; he is not personally involved. But this, of course, is just a fiction: in reality, the human observer and the stuff he observes share the same natural qualities, and this gives the whole business an uncomfortable air of relativity. The scientific study of nature is like Alice in Wonderland's game of croquet in which the mallets were flamingos and the hoops kept walking off the ground. In this context, the scientist's insistence on detachment is simply an attempt to impose order on an unstable situation, a device to overcome the anxiety which arises from his inability to bring everything under human control. It is the modern substitute for prayer and primitive magic.

That needs elaboration. Until the advent of modern science, man had always expressed his feelings of incapacity in the language of religion. Human destiny was said to be governed by luck or fate or the will of God, and the ways of God were inscrutable. Man, by himself, was impotent. Yet this sense of human impotence was always qualified by a conviction that human affairs and natural events are so intertwined that the one can influence the other. Just as an eclipse might be taken as a sign of impending human disaster, so also the power of prayer and magic could provide the faithful with an assurance that, in the last resort, man is dominant over nature.

But in Europe since the 16th century this particular solution to the problem of human helplessness has become less and less acceptable. In times of drought the clergy may still pray for rain, but scientists pay attention to cloud photographs relayed by satellite from outer space. Bit by bit, the category of natural events has become separated off from that of human affairs: 'natural' is now felt to coincide with that which is orderly and certain, divine inscrutability now applies only to what is human. We are now taught to believe that everything in the universe (except the human self) is subject to natural laws, and that although these laws are very complicated they are all open to discovery. The more effort and money we devote to research, the more regularities we are able to discover. Yet the old anxieties remain. Precisely because the scientist now sees himself as a detached observer and not as a participant, he feels frustrated by his inability to intervene. His isolation from nature has cut him off from God.

The modern concept of nature resembles the older concept of God in a number of ways: 'an act of God', 'a law of nature' - either will serve equally well as the ultimate explanation for why anything happens at all. But in one very important respect the two ideas are diametrically opposed. God's ways are unpredictable. Nature's ways, if we work hard enough, can be completely understood.

But understood by whom? However much I try to stand apart, I still know perfectly well that there is no part of me which is not itself a part of nature. That being so, how can I be sure that what I discover about the world 'out there' is not somehow predetermined, or at any rate delimited, by the mental apparatus with which I do the discovering?

That is the really basic background problem against which the world of orthodox science tries desperately to maintain some kind of distinction between the human observer and what he observes. Man considered as a biological species has all along been recognised as a part of nature, and his physiological processes have been subjected to intense scientific investigation. But the human person—that is to say, man as a conscious moral creature surrounded by the artificial products of his own

creativity—is somehow not a proper subject for scientific inquiry at all. So experimental psychologists must play their games with rats in mazes, not men in houses; in zoos the animals are on one side of the bars, the men on the other—the stress is on how different we are, not how alike. And the same applies to the scientists themselves. Natural scientist and social scientist are whole worlds apart.

But in their own style the social scientists are equally afraid of moral commitment. They simply fit the proposition ‘man in society is a part of nature’ to the orthodox doctrine that ‘everything in nature operates according to principles which are open to discovery.’ They therefore discuss human behaviour as if it were objective and external to themselves, Economists study statistics, not human beings. For the sociologist, men in houses are like rats in mazes. And again there is the evasion of responsibility: the glib doctrine that scientists are concerned with how things are, not with how they ought to be.

What it boils down to is this. If you accept the argument that the only problems worth tackling are those which you have some chance of solving, then you must always assume, from the start, that everything proceeds according to orderly processes of cause and effect and probability. This applies whether you are dealing with a static situation or with a changing situation. So the very first basic assumption for any scientist is that the stuff he is studying is incapable of thinking for itself. It is not open to nature or any part of it to change the rules in the middle of the game.

But that precisely is the difficulty. Man himself is a part of nature, and he is now capable of changing the rules. Human beings can now transmute one chemical into another, they can create artificial substances having the attributes of living tissues, they can alter the genetic inheritance of living cells. Such actions are appropriate to a god but quite inappropriate to nature—as the scientist ordinarily conceives it. It is not vanity to say that man has become like a god, it is essential to say it and also to understand what it means. Since, god-like, we can now alter nature, including that part of nature which is man himself, we can no longer console ourselves with the thought that a search for scientific knowledge is its own justification. It has ceased to be true that nature is governed by immutable laws external to ourselves. We ourselves have become responsible.