

#### CAN WE SURVIVE OUR FUTURE?

is very much in the air. One has, of course, to take this mood into account, but I can see no substantial justification for it. Their world is no worse than ours was in our youth. There *are* difficulties and they are partly at least due to scientific and technological progress. But, at the same time, they are a challenge which requires our response. My feeling is that it is the very act of responding, the act of getting a purchase on the reality that surrounds us, and the joy which comes from a creative response, that may regain for us that 'harmony of life' of which the ancient philosophers have spoken.

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#### JACQUES ELLUL

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#### Conformism and the Rationale of Technology

Jacques Ellul was born in 1912 in Bordeaux. He studied at the University of Bordeaux and at the University of Paris, and holds degrees in Sociology, Law and the History of Law. Since 1938 he has been associated with the University of Bordeaux as Professor of History and the Sociology of Institutions.

During the Second World War Professor Ellul was a member of the French resistance movement, and since then he has been active in politics in his native city. He is prominent in the world Ecumenical movement. He published *The Technological Society* (original title *La technique ou l'enjeu du siècle*) in 1954 and *Propaganda (Propagandes)* in 1962.

URBAN: The word 'convergence' in these discussions has been used as a shorthand expression for the idea that the size and sophistication of technological societies—whether they are supported by a capitalist or socialist economy—make them grow more and more similar. Your use of 'convergence' in *The Technological Society* takes one into an entirely different field.

ELLUL: I would agree with Duverger and other convergence-watchers that the similarities between industrialised societies are more important than their differences. However—as you will probably discover in the course of this discussion—my reasons for subscribing to the theory are different from theirs.

I use the word to show that in a technological civilisation the different techniques with which man has to deal in his day-to-day activities are entirely unrelated to each other and often even pull in different and seemingly incompatible directions; yet, in the end, they all come down to man, they converge on

him and threaten to reduce him to an object of techniques. In other words, it isn't man so much dealing with technologies as the technologies dealing with man. This does not mean to say that there is some conspiracy here between technologies or technologists. There is no conductor to the technological orchestra—the convergence is spontaneous. In fact, most technologists are not conscious of what they are doing, and those who are usually believe that their particular technique serves the good of man or, at the very least, leaves the integrity of the human being intact. Nevertheless the conjoint result of man's exposure to technologies of various kinds is an operational totalitarianism which may lead to, or may facilitate the rule of, political totalitarianisms, though not necessarily of the overtly dictatorial type. We know what technologies have already been used by totalitarian governments, but we'd do well to expect more of such to be used both in those societies which are dictatorships and those which are nominally free.

URBAN: You seem to be saying that it is not so much the particular content of any technology that affects man as the fact that he is ceaselessly assaulted by a variety of technologies. I'm reminded of MacLuhan's *The Medium is the Message*, for you too ascribe in your book an almost mystical significance to technique—to the signal rather than what the signal is about.

ELLUL: I have some reservations about MacLuhan's method but I'm in full agreement with his basic ideas. As to his phrase 'the medium is the message', I had put forward the same idea, almost the same phrase, in my book on propaganda. I tried to show there that what matters in propaganda is not the content of any particular item, but the fact that the deployment of a propaganda technique brings in its train certain effects. What are they?

Propaganda in a technological society is called upon to integrate the individual in a technological world, and from this point of view it hardly matters whether the state is a democracy

or some kind of a despotism of left or right. Propaganda is a means to persuade the individual to submit to the exigencies of an increasingly mechanised, artificial world with good grace and even with enthusiasm. How does it do this? Under the effect of a certain amount of propaganda the individual closes up. He becomes insensitive to TV, radio, posters, newspaper articles, etc.: he is rendered immune to the poison by tolerating gradually increased doses of it. The question is: has he been rendered immune to the *themes* of propaganda or to propaganda itself? Experience shows that though after a certain time the individual becomes indifferent to the content of the signal, he is by no means indifferent to the signal itself. He obeys the catchwords of propaganda though he no longer listens to it. He no longer needs to see and read a TV advertisement—a simple splash of colour will do to awaken the desired reflexes in him. In short: though the toxin-anti-toxin process has immunised him to ideological content, he has been sensitised to propaganda itself. And once his attitude and behaviour have been broken and new responses determined, the smallest doses suffice to keep him in the desired condition.

URBAN: I would tend to question whether the signal alone is as effective as you say. One could see in Czechoslovakia in 1968 that the content of radio and television was all important, while the stimulus as such played a minimal role. Up to about 1967 official propaganda in that country was all-pervasive—and ineffective. But when the reformers were given the freedom of the press, radio and television, the public lost no time in picking up the message and putting its weight behind the reform movement. The media used under Dubcek were exactly the same as under Novotny, but the message was different. If MacLuhan is right, there should never have been a 'revolution' in Czechoslovakia.

ELLUL: In the short run the message is obviously important; by giving publicity to certain ideas one can induce action. But there is another, a deeper influence which persists when the

## CAN WE SURVIVE OUR FUTURE?

message has worn away, and that is the psychological impact of the medium itself.

URBAN: What exactly is this psychological impact?

ELLUL: It acts on many levels. At its most general I would say it foists on the individual a whole range of patterns of thought and action which make him conform to a technical rationality. Now one can safely say, without going into the complex problem of what is the true nature of man, that this type of rationality is alien to man if it arrogates to itself the right to be a life-philosophy, which it does. And basically the irrational movements we see in our society seem to me to be spontaneous and rather ineffective reactions against this imposed rationality. They are a form of orthopraxy—a reluctant assertion of corrective practice.

URBAN: You say somewhere in your book that the disproportion between the leisurely ways of the bourgeoisie and the explosive tempo of technology has produced a state of 'war' which is with us all the time. Is this another side of the battle between the demands of technical rationality and man's instinctive refusal to subordinate his whole self to it?

ELLUL: Yes, the rationale of technology drives us into rational behaviour, but we are not happy with it. Countries that have reached great perfection in their technology—and I'm thinking here of Sweden as a typical example—sometimes feel that perfection to be intolerable. It bars the outlets to some of the deepest impulses of human nature. When that happens, a revolutionary, and usually irrational, reaction to the too perfect universe is almost inevitable. I have called these reactions 'ecstatic phenomena': when the constraints of a technological civilisation reduce the number of ways in which religious sentiments can be released, these sentiments concentrate on opposing the technological mode of thinking itself and acquire enormous intensity.

## CONFORMISM AND RATIONALE OF TECHNOLOGY

URBAN: The ecstatic rebellions you mention are variously attributed to the hypocrisy of democratic institutions, to the surfeit of our civilisation, to the manipulative power of hidden persuaders. You seem to ascribe them to technology alone. Is this in fact the underlying cause of dissent?

ELLUL: I think it is. A technological society obliges the individual to make vast sacrifices—sacrifices of what, in pre-technological societies, were considered the prizes in life: pleasant contact with nature, personal relations easily maintained over short distances, the compactness and solidarity of the extended family, work satisfaction, personal independence and so on. I am not saying that the possession of these made man happier, but they were there and could be taken for granted.

Technological society, with its rigorous ethic and high degree of organisation, has stripped us of all this. A deprivation of that magnitude cannot be accepted without protest, and it is naturally the young who react most vigorously against this kind of sacrifice because they have the most to lose. They don't easily vote for an existence which requires them to spend forty years of their lives making technology function. What value is there in such slavery? What possible interest? Hence they rebel, and the cause of rebellion is their rejection of the ethos of the technological mode of living. But there are two paradoxes here. First, the young cannot see the advantages of going into a technological society because they are, without realising it, already the beneficiaries of that society: a young Chilean would not be against it. Second, technological society has shown itself to be perfectly capable of absorbing and disarming contradictory currents of opinion, even those directly questioning its own *raison d'être*. The 'underground', for instance, is now part of technological society which does not seem to be cracking under the strain. Technological society has a complex enough system of rationality to make room for the irrational without in any way providing constructive outlets for man's non-rational aspirations.

URBAN: Your reading of the intellectual and political permissiveness of technological civilisation is similar to Marcuse's indictment of the American type of consumer civilisation, with its tendency to absorb its enemies, adjust the misfits, take the acid away from whatever is uncongenial to its social ethos and present it in acceptable form. '... the supreme luxury of the society of technical necessity,' you say, 'will be to grant the bonus of useless revolt and of an acquiescent smile.' However, in your presentation this incorporation-by-anaesthesia is done exclusively for reasons of technology whereas Marcuse's accusation is directed against several factors that make up the civilisation he describes, only one of which (though perhaps the most important) is technology.

ELLUL: The American model is simply an extreme case of the tyranny of the rationale of technology. American society is, in its non-political aspects, the most conformist we have seen in modern times, and I ascribe this conformism to the circumstance that in the United States technology has reached a pitch of perfection which it has not reached elsewhere, and that perfection demands a faster and more effective assimilation of even the most discordant elements than is the case in the technologically less developed countries.

URBAN: Your use of the word 'technology' would appear to refer to something much wider than simple nuts and bolts mechanics. In fact, in your books you do not talk of technology at all but of 'technique', and this would seem to have something to do with the technical way of doing things, the technical cast of mind.

ELLUL: Yes, in my vocabulary 'technique' has a much wider range of meanings than 'technology'. Up to about the end of the 18th Century one could legitimately talk of technology, for it applied to solving practical problems by mechanical means—gadgetry would be the word today. But at the turn of the 18th Century people began to look for efficient ways of doing things

in the whole domain of life, and basically the technical mind is one which looks for this kind of efficiency as an end in itself. As society is more and more geared to this efficiency, the objectives tend to get lost sight of and, after a time, cease to matter. Whether it is a question of business or a question of politics, the search for the most efficient way of doing things becomes *the* paramount consideration; and this search is what I call 'technique'.

Now this does not at all mean that there isn't a profound relationship between technique and technology. Today technique is the general *modus operandi* and is applied outside industrial life—the growth of its influence has little to do with the growing use of the machine. Yet the machine is profoundly symptomatic: it is the ideal to which technique aspires. The machine is pure technique. Technique sets out to build the kind of world the machine needs. It does in the field of the abstract what technology did in the field of labour.

URBAN: Aren't you condemning rather more than the tyranny of the machine? Aren't you questioning the rational mode of intellectual enquiry?

ELLUL: I am not condemning technique or technology—I'm not trying to pass judgement. I'm trying to describe the rise and nature of technique in order to gain a better understanding of the structure of our society; I am trying to see how the individual, who is the main victim of technique, could be spared some of his suffering. But technique is here to stay. It is the result of an evolutionary process which has also given us much we ought to be grateful for. But, I repeat, it is only by understanding exactly how the technical system works that we can determine how man can live with the technical system.

URBAN: Having read your book I'm not so sure that you really hold it desirable that we should learn to live with the technical system. I have certainly been left with the impression that you regard it as a wicked system and that you could think of a better one.

ELLUL: Of course I could *think* of a better one, who couldn't? The problem is: to make a moral judgement, to say that the technical system is inhuman, I would have to have an exact idea of what *is* human, I would have to have a reliable reading of what is man. Now I have no definition of man that I'm sure about. All I can say is that up to now man has succeeded in making his own history. With the rationale of the technical system pervading his entire life—a rationale he is not even beginning to grasp—I'm not so sure that man can go on making his own history. It is not through a new morality that man will manage to save himself, but by making use of his conscience and intelligence. When man manages to dominate the technical system by understanding it, he will also gradually determine what is essential to his humanity. But one has to stress the importance of understanding technique before one can go any further. Think of it in this way: every time there was an epidemic in the Middle Ages, religion and morality were brought in to explain and expiate for the disaster. When, in later centuries, science was brought to bear on such afflictions, their causes were understood and remedies were found.

URBAN: This is a telling parallel but doesn't it rather confirm my impression that you'd be happiest if we could do away with technical civilisation? If technique is an epidemic, our first duty must be to find its causes and then to stop it.

ELLUL: No, technique is not an epidemic and it would be entirely wrong for you to think that I'm yearning for a pre-technical civilisation. Technique is a phenomenon that can be dangerous to man, and the danger is by no means alleviated—it is in fact made the graver—if we think that mystical and moral kinds of reactions can shove it out of the way. We have to understand it, and understand it rationally in the same way as medical science investigates the causes of disease. That is all my comparison was meant to convey.

URBAN: I sense a dichotomy in your attitude to rationality. On the one hand you seem to deplore any attempt to criticise or reject technique for moral and emotional, i.e. non-rational, reasons alone, but on the other hand you recognise and, by implication support, the irrational elements in human behaviour. You say in *The Technological Society*: 'Man cannot live without a sense of the secret . . . the invasion of technique desacralises the world . . . mystery is desired by man' and so on. This means that a society based on the rationality of technique cannot do justice to human nature, and that in turn would imply some knowledge on your part of what human nature is. However, you deny that you possess such knowledge and I tend to question your denial. Let me press you on this point for it seems to me important.

It seems to me that you give us a fair indication of what human nature is by telling us what it is not. You say, for instance, that 'No technique is possible when men are free . . . Technique requires predictability and, no less, exactness of prediction. It is necessary, then, that technique prevail over the human being . . . Technique must reduce man to a technical animal . . . Human caprice crumbles before this necessity. The individual must be fashioned by techniques, either negatively (by the techniques of understanding man) or positively (by the adaptation of man to the technical framework), in order to wipe out the blots his personal determination introduces into the perfect design of the organisation . . . The individual who is a servant of technique must be completely unconscious of himself . . . True technique will know how to maintain the illusion of liberty, choice, and individuality . . . The solitary is a useless mouth and will have no ration card—up to the day he is transported to a penal colony' and so forth. So, by a process of elimination, we have here a picture of man as you see him. Does this picture stem from a Christian, or Hellenistic or Confucian conception of man?

ELLUL: Well, there is of course a conception of man behind my reflections. I am a Christian but I cannot say that I have

#### CAN WE SURVIVE OUR FUTURE?

a Christian conception of man. I don't think man's nature is permanent; it can be changed and perhaps it has changed. Nevertheless, there is a kind of minimum programme which man has always set himself in history and which is now threatened by technique. This programme doesn't tell us much about human nature, but it does tell us something about the human condition. Well, it seems to me that every human ambition to understand the world in some new frame of reference, to change man's surroundings, to plan for the future, is an expression of man's freedom. I am not saying that man is free, but his ideal has always been *to be free*, and this aspiration to the state of freedom has been his supreme goal in history. It is going against this historic experience to shut him up in a system, the rationale of which makes no allowance for the rationale of man. A system modelled on the pattern of a purely technological rationality is too perfect, hence too limiting and oppressive, to allow man to function along the lines we have always known him to follow. Now it can be argued that man ought to adapt himself to the rules of an entirely new situation, that there is, in what we know of human nature, room for a great deal of improvement. This is a hypothesis which implies a multitude of value judgements and is no fit tool for analysis. All we can say with certainty is that any attempt to curtail man's freedom—real or imagined—is bound to collide with his ambition to extend the area of freedom he has already attained.

URBAN: You say repeatedly in your books that man needs outlets for his religious sentiments, and you also say that technique has robbed him of most natural (or shall we say "habitual") outlets. Are these sentiments then permanently suppressed or are they diverted into other channels?

ELLUL: The popular assumption that modern man is unholy and entirely secularised is false. On the contrary, man is in the process of creating new forms of religious expression, but instead of relating his religious needs to his natural surroundings—of which he experiences less and less—he relates them to

#### CONFORMISM AND RATIONALE OF TECHNOLOGY

his new habitat. Western man is no longer in daily contact with nature—he is in contact with technical objects. He lives in the town and he uses technical methods of work. It is to these that his need for the sacred is gradually transferred. The artificial satellites, the *Apollo* programme, even jet travel lend themselves to mystical interpretation. Man invests these with a powerful aura of belief. For the technician par excellence, the power of technology, which covers the earth with its network of telstars, waves and wires, is the locus of the sacred and a source of pride and satisfaction.

URBAN: Isn't this mythologisation of whatever seems most admirable and most coveted to man an age-old phenomenon: the rain-god in primitive cultures, womanhood in the mediaeval court lyric, the Great Mother in early French Socialist literature, now the moonshot and genetics?

ELLUL: It is of course a general phenomenon, but given the fact that today it is technique that is the object of worship, it is a most insidious phenomenon, because a religious attitude to technique prevents us from seeing it for what it is: we blow it up and trust in it instead of simply trying to understand it as a rational process. If a technical object is nothing more than a technical object, it is not a force we have to worry about, but if it is an object in which we believe, which we mythologise, and to which we hand over control of our destiny, then the object becomes powerful and dangerous.

URBAN: I think we are touching here on a related problem: the transformation of means into ends. We have come a long way from Socrates's reassurance of Phaedrus: 'But surely, my friend, if the ends be glorious, all that befalls us in seeking them is glorious also.'

It is by now a platitude to say that Christ, if he could walk down the corridors of the Vatican, would be greatly astonished to find a hierarchy of churchmen and libraries of dogma raised on the revolutionary poetry of the New Testament. By a similar

## CAN WE SURVIVE OUR FUTURE?

token Marx, who said 'I'm not a Marxist', and who was squarely against any idea of setting up a party of the proletariat, would gasp at seeing his portrait worshipped in Red Square and would probably join the opposition. *Mutatis mutandis*, the rise of technology seems to have followed a similar path, and the lesson I would draw from all this is not about technology, or Christianity, or historical materialism but about human psychology: if we want something badly enough, or fear something badly enough, we turn it into an end and surround it with sacred symbols, however menial the origins of the object of worship may be.

ELLUL: It is indeed man's great weakness to surrender himself to some force beyond him. But technique is an unusually powerful seducer for, unlike Marx and some of the old religions, it has already given proof of its ability to solve a vast number of practical problems. It has credibility. The trouble is that from its usefulness as a minister to our needs we tend to infer that it could do even better if we allowed it to rule us. At this point man renounces his independence, hoping that this mysterious new force will do all the thinking for him. But this is not so. Technique will think for *itself*, but it will not do man's thinking: the order it has created was meant to be a buffer between man and nature, but it has evolved autonomously and has created its own laws which aren't the laws of either man or nature. We are still ignorant of these laws but it is quite clear that a new necessity has taken over from the old. The morality it imposes on us demands unquestioning loyalty to technique and the technician, and the road to that loyalty is paved with an educational system which induces us to comply with the technical environment. In practical terms this loyalty demands a behaviour which is dedicated to and dictated by work and a high degree of social conformity. All other values a technical civilisation creates revolve around these two central factors.

URBAN: I now have a clear picture of the values and qualities you contrast with the essential, or at any rate the desirable,

## CONFORMISM AND RATIONALE OF TECHNOLOGY

nature of man. But a positive formulation of your position still escapes me. Let me approach the matter from another angle.

In the last chapter of your book *The Technological Society* you say: 'When our savants characterise their golden age in any but scientific terms, they emit a quantity of down-at-the-heel platitudes that would gladden the heart of the pettiest politician . . . "To render human nature nobler, more beautiful, and more harmonious." What on earth can this mean? What criteria, what content, do they propose? . . . "To eliminate cultural lag." What culture? . . . "To conquer outer space." For what purpose? The conquest of space seems to be an end in itself, which dispenses with any need for reflection.'

May I put the same questions to you and ask you: if and when technique has been conquered, what is the culture you would put in its place? What purposes would it serve? I'm sure you would not wish it to be thought that the conquest of technique is an end in itself any more than technique is.

ELLUL: I sympathise with your effort to lay bare behind my criticisms some ideological axe you suspect I am grinding. But there is none. I have already said that personally I'm a Christian, and I believe that the truth is revealed in Jesus Christ, but that statement can have a variety of interpretations, and I would hesitate to relate them either to the understanding of a technical civilisation, or to the way in which the rationale of a technical civilisation may be overcome. However, if there were to be one value which I regard as the most important, it is freedom, because, although freedom (one might say) is the precondition of error, it is also the precondition of the correction of error, which is more important. Now I would not claim that historic Christianity has lived up to the revolutionary message of the New Testament, or even that it has been an agent of non-conformism—no human institution that has lasted two thousand years can be that—but Christianity has always kept man a certain distance apart from his social environment. The Christian was encouraged to participate in the concerns of society but also to keep his critical faculties intact. Of course, from

## CAN WE SURVIVE OUR FUTURE?

time to time, he has been subject to great social pressures to conform, but the fine balance between the positive and negative features in his attitude to society has never been destroyed. In other words, Christianity has guaranteed a form of freedom which, it seems to me, is worth preserving.

As to your question: what spiritual goals is a post-technical civilisation likely to set itself?—I cannot give an answer because I would first have to ask myself whether, in our new, technicised, situation it is at all possible to think of investing life with a new meaning. My suspicion is that this meaning will emerge only in the process of shedding what is unacceptable in the rationale of technique. This may give us a fresh reading of the nature of man, but one cannot be sure that it will, and one can be even less sure what it might be. We are on the defensive, and all we can do at this stage is to see to it that the tyranny of technique does not destroy our options.

My personal aim has been to help one generation of men and women to preserve their sense of criticism *vis-à-vis* technical civilisation, but the step from that rearguard action to a fresh departure is a long one. New civilisations do not evolve overnight, nor are they the work of a small number of men. Ours too, if there is to be one, will be the result of a slow and laborious process, with many false starts and setbacks. In the meantime we have to make sure that we are not engulfed by a world-wide totalitarian dictatorship which would give technique its full scope and take care of all our problems.

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## ERICH JANTSCH

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### For a Science of Man

Dr. Erich Jantsch is the author of *Technological Forecasting in Perspective* (OECD publications, 1967) and editor and co-author of *Perspective of Planning* (1969). Dr. Jantsch was educated in Vienna where he obtained his Ph.D. in Astronomy. He worked with industry as a physicist and engineer, and was for several years a full-time consultant to the Directorate of Scientific Affairs in OECD. He held visiting appointments at MIT in 1969, at the Technical University of Hanover in 1970, and is currently with the Department of City and Regional Planning, Institute of International Studies, at the University of California, Berkeley.

URBAN: Communist parties in the Soviet Union and Eastern Europe have been planning their economies and societies from the day they came to power. In Western Europe and especially in the United States we are now being warned that unless we too heed the voices of the long-range planners, we might find ourselves in deep trouble as creators and consumers of the social product, as consumers of the world's energy resources, as men with a stake in the cultural heritage and educational resources of our civilisation. Have we just discovered what the Communist parties have known all along?

JANTSCH: I don't think so. The philosophy underlying the development of all future-oriented thinking in the West is entirely different both from the Communist type of planning and from its first cousin: industrial product planning which has been employed by Western enterprises for a long time. This old type of planning—whereby you determine the likely consumption of soap-powder in New Jersey if the average man con-