

THE GLOBAL TECHNOLOGICAL SYSTEM AND THE HUMAN RESPONSE

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Translation by W.H. Vanderberg

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Mr. President, Chairperson, Ladies and Gentlemen, Dear Colleagues, first I would like to say how deeply honored I feel to be giving this opening address. I apologize for speaking French and for not being able to be among you. This invitation, which you have extended to me, represents for me a true consecration of 40 years of work on the problems that you will be examining.

I will not dwell on certain analyses which were once regarded as original, but which have now become accepted. For example, it is no longer possible to think of techniques in isolation from one another. They constitute a coherent ensemble and even a *system* in the sense that Livon Bertalanffy has used that term. There are no separate, isolated, techniques. They all interact with one another and each depends on all the others.

Nor will I dwell on certain characteristics of the system of technique, which are not generally understood. For example, its autonomy, its tendency toward unlimited growth, and its capacity for self-augmentation. I would like to concentrate on two points. Our association is called Science, Technology and Society. It is really bold to so clearly affirm the correlation between these three givens. I will first of all emphasize this correlation without going into detail about what may be included under the general term of Society. What must be grasped is that none of these three large sectors can exist without the others. Today the advance of science depends on increasingly powerful technical equipment. A few years ago I made an error. I thought

that the computers available at that time were sufficiently powerful to perform the functions demanded of them as related to the economy and business. And I had neglected the fact that scientists, for their increasingly complex and extensive calculations required much more powerful computers. In the extreme, I would say that progress scientific research is no longer possible without an ensemble of technical means in every sector. At the same time this research costs more and more money, partly because of the growing cost of the apparatus, but also due to the increasing number of researchers and their evermore extensive training. As a result considerable financial investment is required. In the United States, I know that this funding is largely private. Yet the budget for scientific research is becoming such that one can no longer do without the intervention of the state, which alone is capable of mobilizing the necessary capital. So at the moment scientific and technical research is both a private and a public effort. In Europe, of course, everything depends on the state.

When I turn to the second term namely, technique, I observe the same interactions. Technique -- and this is increasingly exact -- cannot progress without sustained scientific research which has technical application as its goal. And which cannot be realized without technical experts making use of increasingly extensive and costly apparatus, to which I've already referred.

As for the third term, namely society, how can we fail to recognize that in our society everything depends on technique, and I mean everything. I will emphasize only two aspects and not deal with all that might be said on the subject. Let us consider what has been the great law of the past few years: the notion of research linked to development. This applies to society in all its

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Translator's Note: Many of the themes in this address are elaborated in Ellul's latest work on technique "Le Bluff Technologique", 1988.

aspects, not just in its economic aspect, not just in the aspect of production and consumption, but also to culture in its most general sense, information, outreach to the disenfranchised, well-being, health, *everything* must be developed. We cannot stand still thinking that we have achieved a sufficient level of development now that people are possessed by the idea of progress. As a consequence of that progress, and the hope of always obtaining further progress, what we see is a society of development which is constantly developing -- a development, so it was believed, based only on scientific and technical research. During these last two years this relationship between research and development has been questioned. It has been criticized by some American economists. Since then, we conceptualized this ensemble of science, technique and society, as having a kind of positive feedback. That is to say, the more technique progresses, the more it allows science to advance and the more the state grows. The more the state develops, the more demanding it becomes, and the more it solicits new possibilities in the economic sphere, as well as demanding a technique with better performance, in order to achieve a more powerful international position in terms of both prestige and foreign trade. It is rather amazing when you think that the balance of foreign trade depends solely on this scientific and technical research.

From another angle it is possible to observe another mutation in our society which has been generated by technique. We used to conceptualize society in stable terms, even though we had an idea of progress and of historical evolution. By stable terms I mean a society constituted of objects, objects of all kinds. A society composed of citizens, well-defined occupations, clear administrative and legal regulations and a more or less stable social hierarchy. All these objects as such remained themselves. They could be combined by various regulations, which could be changed in accordance with orderly procedures.

We are now moving toward a society which has been called a society of networks, where everything must constantly be thought of as changing, and as following *flows* which are more or less clear and more or less defined. Thus the political economy can no longer be conceptualized in terms of the production of goods, but must be thought of in terms of flows. This mutation derives from a proliferation of information and from the processing of information. Hence, the extraordinary difficulty faced by a government -- designed to govern a society of objects -- in becoming the manager of a society of networks. Neither the law nor the traditional forms of government are adapted to governing a society of networks.

On the other hand, western people, finding themselves engaged in these networks, appear to be adapting rather well, to the point that they demand this development. However, to the extent that they are fascinated, hypnotized, by the way the effects of techniques permeate their lives, at the same time, they have a constant desire for progress, for changes that improve their lives by the appearance of magical objects, such as television and the microcomputer. They are fascinated by belonging to a kind of society that I might call a never ending show, and, at the same time, obviously, by the convenience of life produced by the interactions of these networks. All this yields a bedazzlement which prevents citizens of the developed countries from perceiving the disadvantages and the dangers. For them the risks are hypothetical and distant, while the gains, gains in time for example, are concrete and immediate. Hence there is a kind of concordance between the citizens, who fit quite well into these networks, and society, which has become a society of networks. But this causes great difficulty for governments, as I've already said, to govern. This concordance between the individual and society is not of the same kind as the one we knew in traditional, primitive societies, nor is it the one we have become accustomed to in democratic societies.

In the next part of my talk, I would like to recall what everyone now knows, namely that the correlation: science, technique, society, can be dangerous -- dangerous to the point that a well-known French physicist has termed our society a society of risk. I will not dwell on the large numbers of these risks which are beginning to be well-known. I will discuss only one later on. But in the face of these dangers, these disadvantages, these burdens, we should have no illusions about the ability of authorities and citizens to cope. Everything one currently thinks of has proven itself to be totally ineffective. We should not put our hopes in those remedies we readily think of, namely, political means, the state and the law. These are adapted to the societies of the nineteenth century, the industrial societies, and these as I've already said, are no longer on the same level as our science and technique. It is equally futile to think that one has a spiritual or moral recourse in the churches. In general, the churches do not *see* the problems of our times. They present a morality that scientists and technical experts cannot accept because it is a morality that is completely out of date and outside of contemporary problems. Moreover, we shouldn't think that modern people are capable of directing and mastering technique. The human is completely overtaken. We must ask what kinds of people we are talking about.

Can we rely on politicians? Clearly no. Can the average citizen influence this society? We know very well how powerless we are. Can the technical expert? Each expert masters only his or her own techniques, they cannot master the whole range. I will refer to only one last illusory way out, namely to withdraw, to withdraw to form small isolated communities, not dependent on this world. I know these exist in the United States, but this is not the answer. All these useless ways have to be eliminated before we can begin to think of the possibility of recovering human mastery over this immense mutation.

Now let me turn to positive developments, of which I will single out two. The first seems to me to be the fact that there are indications of change among the scientists themselves. A growing number of scientists are becoming aware that their science is not *pure* science. Not pure in the sense that science is utilized for ends they did not think of and which they did not desire. There has been talk of a crisis in science in the sense that many previously acquired results, held to be firmly established, are now called into question. And also in the sense that among the physicists, for example, the problem of how to get at the facts themselves is posed, since a fact established in subatomic physics is modified by the presence of the observer. Consequently, a well-known French physicist, d'Espagnat, in his book "In Search of Reality", was able to write "what ultimately is reality if all we can have is a reality modified by our presence?"

But it is not only with the physicists that we find this kind of questioning going on. We find it among the biologists. In France, Professor Testart, who is very well-known, has sounded the alarm about the work done in genetic engineering, saying that limits must be established -- that one cannot just do anything that comes into one's head. And even in mathematics, a well-known mathematician, Professor Nordon, has written a book "Pure Mathematics Does Not Exist." In other words, scientists are looking for more acceptable positions. They admit that there are limits to science, that science does not necessarily give us the truth, and ask either for a moratorium on scientific research or for limits no longer fixed by traditional moral imperatives, but by the scientists themselves, in order not to transform the human into the inhuman.

But this could lead to a conflict between scientists and technical experts, because technical experts do not see what advantage there could be from stopping technical development. The technical expert is always in favor of unlimited development and so is the state. The state, as I've already noted, pushes for development; governments

do not accept the idea of a moratorium on scientific research.

The second indication of change, (and there are others but I will only deal with these two) is the existence of grass root communities, which search for another way of life. I'm not thinking of the ecologist, and I'm not referring to the useless attempts to change society that I talked about earlier. But I note that there are groups of people, citizens, who search for another lifestyle, for example, for a certain relationship with nature. Or those who pay close attention to the quality of goods put on the market by means of advertising, such as consumer groups. And moreover, and rather importantly in France, there are groups of citizens which wish to keep close tabs on what their municipality is doing for example, and wish to be consulted on all major undertakings. In France, there are extremely intense conflicts, between people affected by the expropriation of land by the administration, the state or by large developers. At the moment there is a major conflict over the building of a bridge which will connect the island of Taye to the mainland, a project which would be condemned by all tribunals, but which nevertheless continues as if nothing had happened. So there are groups of citizens who want to exercise a certain control over what happens in society. In other words, we see that we have two different levels of approach, by scientists and by ordinary citizens who have become aware of the risk posed by the exercise of too much power, an awareness which if it became widespread would lead to a change in our civilization.

Now let me focus on proposals for action. I will make two, which I am sure will appear to you as highly utopian and illusory, but I will tell you why I do not think they are utopian. First of all, I firmly believe in the necessity to repopulate the countryside. A country is neither healthy nor balanced when 98% of its population lives in the cities. But this implies a return to an agriculture which is humane and livable, which would exclude agribusiness and the widespread use of chemical products, and so on. The countryside is an environment which humanizes people while the city dehumanizes them. We would then move toward an agriculture producing products of a high quality, which would return to human beings a taste for quality, which modern people have lost. They no longer have any taste and will eat almost anything. You will no doubt say that this is very French. But I maintain that a good cuisine with good ingredients is an art equal to music or painting.

A second proposal, equally improbable and utopian at first sight, but which will no doubt be imposed on us,

constitutes a technical-industrial mutation: to place our power of production no longer in the service of capital, nor at the service of a highly developed technique, but in the service of the third world. Let me eliminate all misunderstanding right away. It is not a question of producing more consumer goods nor of sending the third world our surpluses of corn or powdered milk. The purpose of this proposal is to avoid a serious error. Some who are well intended towards the third world would like to industrialize it as quickly as possible. This is an error which we have already made and which has shown itself to be an error. What we really should produce on a grand scale are the basic necessities which would be furnished free of charge to the peoples of the third world, and which would help to equip them at their own level of capability. We must not import into the third world *our* techniques, but study *their* needs. In my opinion, we must redirect the power of our technique and, for example, stop selling them arms.

But will we know in time how to save them and thereby save ourselves? We never consider that the destiny of the western world is tied to that of the third world now that we have a global economy.

I will conclude by saying that our excess of technique, science and production can endanger the whole western world. In my opinion, what is most threatening is not the risk of war nor the dangers brought to our attention by the ecologists, but the certainty of a global crisis of an economic and financial nature, given the incredible decoupling of the *financial* economy from the *real* economy and the fact that money no longer represents anything. The stock market crisis that we have just witnessed is but a tiny warning, a tiny signal, of what inevitably awaits us if we do not carry out a complete restructuration of the economy. And that implies a reconversion of technique before what I fear may bring the general collapse of the world economy.

You may think that this is utopian. I respond that the utopian character does not reside in these two propositions, which I have greatly over simplified and which must be developed and explained in greater detail. The utopian character does not reside in these two propositions, but in the belief that things in science, technique, and society can continue as they have done during the past 30 years.

Thank you.

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