

Perspectives on Our Age

Jacques Ellul Speaks on His Life and Work

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Understanding Our Age

My political activity and my reflections based on Marx's thinking led me to establish two rather simple things. First, a good number of Marx's predictions about the evolution of capitalism did not come true. The transformation of the world was far more complex than he had envisioned. The capitalist world had powers of resistance that were not exhausted, despite Lenin's explanations. Second, a very large number of those bourgeois that Marx had talked about disappeared, especially the ineffective and useless portion of the bourgeoisie, the people limited to existing on a private income. Thus, there had been a certain transformation of capitalism too. I therefore wondered if the Marxian analysis of capital and capitalism in the nineteenth century was equally valid in the first third of the twentieth. It was certainly questionable. Next, it struck us, especially in the personalist movement, that there were certain extremely similar trends in both Soviet and capitalist society. Beyond the economic transformations and beyond the political and legal forms, one could find common elements—particularly the need to increase industry at any price and to develop technical objects.

Here, too, we were left with a question. We felt, perhaps because we hadn't read all of Marx, that he hadn't given technique the position it has in our era. The first person, no doubt, who stressed the importance of technique (in the proper sense, which I will try to define below) was my friend Bernard Charbonneau. In 1934, he began to regard technique as the decisive factor, the essential factor in the world we live in—a truly prophetic view. But Charbonneau, who teaches geography, did not create the stir that his ideas merited. He is completely unknown despite his highly remarkable books. It was he who first drew my attention to the phenomenon of technique. I gradually realized that a transformation had indeed taken place since the nineteenth century. Basically, Marx was speaking of a society dominated by the industrial world. In 1930 to 1940, this industrial world was still dominant. But now new trends had emerged.

It struck me that something similar and comparable in both the Soviet and the capitalist worlds was precisely the technical phenomenon. One could start with the extremely simple idea that a Soviet and an American factory were exactly the same thing, just as a Soviet and an American automobile are the same thing. In other words, on a totally elementary level there were common points, and this was a reason to compare the two kinds of organization. Little by little, as we analyzed

the influence of technique and its importance in our society, we came to realize that technique was the most decisive factor in explaining our era. As an explanatory element, it could play the part that capital had played in Marx's interpretation during the nineteenth century.

I don't mean to say that technique has the same function as capital. Nor am I saying that the capitalist system is a thing of the past. I know that it still exists, but capital no longer plays the role it did when Marx was studying it in the nineteenth century. Power in particular and the reproductive capacity of value are no longer tied to capital; they are now inherent in technique.

However, perhaps we ought to be more precise. When I use the French word *technique*, normally translated into English as *technology*, I do not mean exactly the same thing as the French word *technologie*, which is also translated into English as *technology*. We have to be meticulous about this simple point of vocabulary. I know that the two are habitually confused. Etymologically, of course, *technologie* means a discourse on *technique*. That is the true meaning of *technologie*. Now when I speak of *technique*, I am speaking of the technical phenomenon, the reality of the technical. When I view an automobile, the engine of the automobile is in the category of *technique*, i.e., the technical. It is not what the French call *technologic*, even though English usage tends toward *technology* on this point. The study of the engine and the discourse on the engine is *technologie*. But the phenomenon itself must be viewed as part of *technique*. I know the difficulty of this semantic problem in English, for there is only one single word, *technology*, to designate both *la technique* (the concrete thing) and *la technologie* (the discourse, the teaching of the subject itself). But we must absolutely distinguish between the two. It is the same difference as between *society* and *sociology*, or between *earth* (*g* in Greek) and *geology* (the science of the earth). However, there is a further difficulty. The English word *technology* essentially concerns the work of engineers, chiefly in the industrial milieu. But for me, *la technique* is a far wider concept, referring to efficient methods applicable in all areas (monetary, economic, athletic, etc.). I would prefer that English retain the word *technique*. Thus, in this sense, it is *technique*. In this reality, in this substance—one might say in our Western society—it is *technique* that struck us as the determining element, and also as the determining element in the creation of, say, value.

We know that for Marx, work is what creates value. We are bound to see that in a society which has become extremely technical, the determining factor is both scientific research and the application of science in the form of technique. These statements are not peculiar to the capitalist structure. This is what creates value now; even some (though not all) Soviet and Communist economists acknowledge it. In other words, we have to reread the world in which we now live. Not in terms of the capitalist structure, but in terms of technique.

The further I advanced, the more I asked myself which phenomenon would have struck Marx as the one most determining our society if he had worked in our twentieth-century milieu instead of the nineteenth-century milieu? Which phenomenon would have struck him as the one most crucial to structuring both the human condition and the political organization? I grew more and more convinced that technique is the element that would have caught his attention. Hence, it was in terms of Marxist thought and with relative faithfulness to Marx that I began to study the phenomenon of technique more and more closely.

Of course, others had more or less discerned the role of technique. I am thinking of Max Weber in particular, and then Lewis Mumford a bit later. But I feel that one cannot fully compare my research to theirs. In Max Weber, we most certainly have a very closely related method, but I cannot say that Weber influenced me. When I commenced these investigations, I was totally unacquainted with Weber's sociology, and I didn't get to know it until 1944. We certainly have a similar approach to issues and a similar sociological method, but there is a major difference between us.

However much of a genius and prophet Weber may have been, the society he analyzed was the society of 1900, or at best, the society of the nineteen-tens and -twenties. He died in 1920. Hence, he did not know the technical phenomenon in its full development. Scholars now generally agree that the watershed between the older society and the typical society dominated by technique came around 1945. In other words, Weber had a particular view of how general the technical phenomenon was. He thought about the bureaucratization of society in terms of technique, but he could not really study the phenomenon himself.

However, many other sociologists have studied certain aspects of our society dominated by technique. I am thinking of Raymond Aron in France and Galbraith and McLuhan in the United States and Canada. Aron has essentially studied industry; Galbraith, the technical, bureaucratic, industrial state and a particular power structure—the technobureaucracy, as it were; and McLuhan has studied the problem of mass media. But all of them, in my opinion, have done only fragmentary research. One cannot investigate the whole modern social phenomenon on the basis of the technostructure any more than on the basis of television. In other words, there is a general, overall view encompassing research on industry, the modern state, and television. This all-inclusive view, this framework, is that of technique. Raymond Aron is very critical about some of my research, finding it much too general and systematized. But it is systematized only in that I try to offer a theoretical explanation for a phenomenon that strikes me as all-encompassing, a phenomenon that covers the whole range of human activities; whereas Aron tends to pinpoint only certain aspects, especially in his studies on industry.

In my research on technique, I was ultimately led to situate modern technique in relation to the past. This is obviously very much on the minds of those who say to me, “But people have always used techniques.” Of course, people have always used techniques; nor can we say that what we are now doing is unrelated to what was done in earlier times. Nevertheless, I feel we should not reassure ourselves by saying it’s basically the same thing. According to Emmanuel Mounier (and this is one of the reasons I broke with him), there is only a difference of degree between a flint arrowhead and the atomic bomb. In this case, I would have to very firmly apply Marx’s notion that, on a certain level, quantitative change is qualitative change. Hence, when the human race moved from the flint arrowhead to the atomic bomb, there was a *qualitative* change. Mounier also said: “When you admire techniques so much, just look at your own hand. Is there any technical device more perfect than your own hand?” Well, that’s true, of course. But I don’t think that this notion allows us to understand in any way the singular and unique character of our age.

In other words, I was led to distinguish between what people were doing in all other societies when using certain techniques, certain technical operations. Clearly, any action of hunting, fishing, building a cabin, even gathering, is a technical operation—a practice. On the other hand there is the phenomenon that we have known in the Western world since the eighteenth century and that has developed during the nineteenth and twentieth centuries; I call it the technical phenomenon.

The great difference between the two is in their respective characters. First of all, there is the participation of the rational. Until the eighteenth century, technique was, purely and simply, a practical matter. In the eighteenth century, people began to think about techniques: they compared them and tried to rationalize their application, which completely changed the perspective. A technique was no longer merely a practice, it was no longer merely an operation. Now, technique passed through a rational intervention, and it had a completely different object; its object was efficiency. When studying the old techniques, one is extremely surprised to see how unimportant efficiency was as a decisive or determining notion. Techniques were used for religious reasons, for purely traditional reasons, and the like. If one technique were more efficient than another, that didn’t trouble the users very much. The technical phenomenon, however, is characterized by evaluations of techniques, and comparisons in terms of this criterion of efficiency.

Hence, the technique existing in the Western world since the eighteenth century is qualitatively different. This is not only a question of volume. Technique has assumed different functions. This is the second element which differentiates pre- and post-eighteenth-century technique; technique has left the framework of material applications. When speaking about technique, we have always habitually thought of the machine. But I feel it is a grave mistake to regard technique essentially as machines.

At the present, with the development of information techniques and communications techniques, people are coming to realize that the machine, although not a secondary phenomenon, is certainly one of many phenomena in technique. Research on rational and efficient methods is expressed not only in constructions of material devices—machines. It covers and has gradually come to encompass all human activities.

By this, I meant that there is now a precise knowledge of how a group or a society is constituted, evolves, and how one can organize to achieve a certain result. Sociology and psycho-sociology supply us with means to obtain the best returns from a work team, to “place” individuals in a given spot at a meeting in order to increase or decrease their influence, to make an organigram of an organization so that it will be as efficient as possible, to know whether it is better to establish long-distance or short-distance relationships in an administration, and so on. These are simple examples of what I mean when I speak of the techniques of organization in a society. They have been widely applied in human relations, public relations, and the army.

Psychological techniques are exactly the same thing. For instance, I have studied propaganda techniques and advertising techniques, and these *are* techniques. Hence, we see that the technical phenomenon covers not just a small part of our activities—those in which, as is often said, our muscular activity is replaced by the machine. The technical phenomenon is tending more and more to encompass *all* our activities.

There are techniques that we obviously are well acquainted with. Anyone who is involved even slightly in athletics knows that they are no longer left to the intuition of the athlete; today, they are extremely rigorous techniques. A century ago, sports were very spontaneous. Runners or swimmers each had a “style,” and each improved individually. But since then, more and more precise rules have been established. A champion’s life is thoroughly programmed (food, sleep, and diversity of physical training). And people have minutely studied (often on film) every single gesture, pointing out an error here, a slowdown or speedup there, endlessly correcting each movement so that utmost efficiency may be achieved. Likewise, people have set up a “strategy,” seeking the right moment for the runner to accelerate to the maximum. . . . All this is technique.

We are dealing with what is basically a power covering the full range of human life. This expansion of technique to human groups, to human life, is one of the essential characteristics of our world.

A last crucial feature, it seems to me, is the relationship between technique and science. Here too, people normally view technique as an application of scientific discoveries. But this schema is far too simple. At the present, we are faced with a highly complex and ambiguous situation; science can evolve only with the help of

technique. One need merely recall the exploration of space to see that science is now tied to the information that the many techniques contribute. In other words, there is no linear relationship between science and technique. The relationship is, first of all, mutual: science/technique and then technique/science.

Beyond that, however, technique likewise results from its own conditioning. A technical innovation is not necessarily the fruit of a new scientific discovery, but most often is an internal, intrinsic development of technique itself. This means that we no longer need science in order to combine several techniques belonging to different domains. These techniques interconnect and combine, resulting in something new, something technically new. Likewise, we know how sterile some scientific discoveries can become for various reasons, over a long period of time, and never flow into the technical domain. Hence, we must abandon this simple view of the relationship between science and technique.

This analysis of the technical phenomenon, along with other factors, led me to criticize the current analysis of the Industrial Revolution. I felt that scholars were overemphasizing the purely industrial phenomenon. The technical revolution, I believed, had already been launched, and the Industrial Revolution was only one of many aspects of it. What permits me to say this is the observation of what took place in Western society when the Industrial Revolution was developing. The state, let me note, appeared at the same time, and in the modern state, with all its structures, one can also note the emergence of administration with a trend toward administrative efficiency, rationality, the use of completely modern devices. We can see the same tendency toward rationalization in law, and we must also recall the rationalization of science, which, having progressed slowly during the fifteen and sixteen hundreds, was truly rationalized in the eighteenth century.

In other words, by taking these three examples—the state, the law, and science—I perceived that it was not only in the area of industry that the technical mentality emerged, along with the concern for rationality and efficiency; this development occurred in many other domains as well. Thus, the great phenomenon during the eighteenth century in Europe was not the use of coal and the construction of machines. It was the change in the whole society's attitude toward a new fact: technical practice. The Industrial Revolution was just *one* aspect of this new practice.

It is astonishing to see historians misinterpret in this way. One need only consult Diderot's *Encyclopédie* in the eighteenth century to realize that people were fully conscious of this change in attitude. At that time, there was enormous interest in machines, but machines as one aspect of technical innovation, as one aspect of the new understanding of human beings or the new understanding of society, which now had to be rational and efficient. One finds this new conception throughout the *Encyclopédie*. Thus, if one no longer regards the Industrial Revolution as the dominant element, the determining element, the problem becomes far more

vast and complex. There is no longer just an economic problem, say, of how people passed from the craft stage to the industrial stage. The problem is now, why do people apply certain processes both in industry and elsewhere—processes that might have been known in the past but that had never been applied?

It seems to me that certain conditions that had never existed before came about in the eighteenth century. I might very summarily indicate five of them, which, simultaneously, allowed the development of the technical phenomenon.

The first was a significant growth in population. This increase presupposed a better organization, but also the availability of a work force, as well as a far denser, far more dramatic circulation, not only of people but also of ideas.

A second fact was what I might call the social plasticity. That is to say, a very large number of *ancien régime* social structures were destroyed in England and France and then in Germany. Social groups crumbled, and their members had the possibility of moving toward completely different activities. This development turned out to be essential for the Industrial Revolution in the strict sense of the term; it also created a working-class population.

On the other hand (and this is the third aspect), the new era brought inventions by intellectuals and practitioners of a clear technical intention. They felt that one must be able to apply the same system of processes in all domains. This was an intellectual innovation.

And then (and this is the fourth element), this development was grafted onto a very long technical maturation, which went on for something like two hundred and fifty years in Europe. This maturation consisted of very small progressions which slowly accumulated, though never appearing to be decisive or to have any structure. This was contrary to what had occurred in the Roman Empire or in China during periods of technical developments. In addition, this maturation may also explain the emergence of the clear technical intention.

Finally, an important factor was the accumulation of capital for utilizing the industrial means, as well as all the technical means. Naturally, capital was necessary, especially when the private entrepreneur was operating. This was the first time since Roman days that Western society accumulated a certain amount of capital from commerce per se.

These five elements together led to the development of the old to the new society, one aspect of which was the Industrial Revolution.

In these conditions, technique, I felt, had gradually become the key phenomenon of our whole society, not only because it gradually encompassed all activities, but also because it could evolve only on the basis of certain values. That is to say, technique is not just a practice; it also presupposes values—an intellectual or a spiritual attitude consistent with the demands of technique. Furthermore, it requires a certain social structure. I just mentioned that the Industrial Revolution came about

only because of new values—rationality and efficiency—and because of a change in social structures. Well, *what had occasioned the technical phenomenon now became a demand of technique for continuing its own development*. You see, in growing, technique requires that human values be in exact accordance with technical development and that social structures develop purely in terms of technique. This, I believe, shows that nothing in a society remains intact once technique begins to penetrate.

I should indicate that values which are indispensable to technique include utility values and, until very recently, work values. We must not forget that in ancient societies work was not a value. It became a value precisely when the techniques required that people be put to work. We are dealing here with a frequent misunderstanding. People always claim that techniques economize on work (and this is quite correct). *But this is based on the conviction that we are meant to work all the time!* This was by no means the conviction in earlier societies. For two centuries now, we must note, the West has worked a lot more than any previous society.

In reality, work has changed character. It is no longer a curse as in the Middle Ages. On the contrary, it has become a positive value because it is indispensable for capitalist and industrial development, and also for all technical development. All people must be integrated in the work process, albeit, of course, with the hope, with the promise, with the utopian expectation, that we will finally no longer *have* to work! This is part of the dual effect of technique, which makes people work to their maximum (Taylorism—time and motion study—is one aspect of technique), but always with the prospect that technique will totally and radically take over for us and replace us when we can finally do nothing. In the nineteenth century, this became an essential value of a world dominated by technique.

There is another essential value, however, and that is happiness. I would like to cite what Saint-Just said: “Happiness is a new idea in the world.” He was right. Happiness was indeed a new idea, but not in the elementary sense that other societies had never had the notion of happiness, or that people had never desired happiness. The new element was that people now realized that happiness was based on certain material conditions. The eighteenth and nineteenth centuries abandoned the idea of spiritual or intellectual happiness in order to have this material happiness, consisting of a certain number of essential consumer goods. And hence, in the nineteenth century, happiness was linked to a well-being obtained by mechanical means, industrial means, production. The new thing that Saint-Just spoke about was that, in the past, happiness could appear as a very vague, very distant prospect for humanity, whereas now, people seemed to be within reach of the concrete, material possibility of attaining it. That was why happiness was to become an absolutely essential image for the nineteenth-century bourgeoisie, and for mod-

ern society. Happiness was attainable thanks to industrial development, and this image of happiness brought us fully into the consumer society.

Now one can almost say we have come to realize that consumption does not assure happiness. We are passing through a crisis, a crisis of values. I just mentioned that work too, as a value, was passing through a crisis. It was the new development of technique that brought about a crisis in the values that allowed the initial development of technique. I also noted that technique not only presupposes adapted values but also demands a social structure allowing the development of technique. We must realize one very simple thing. Every time technique penetrates an environment that is not made for it, it will upset that environment. I am thinking especially of how technique and the techniques involved in industrialization are influencing the Third World.

We can say that wherever the local work force was called in for purposes of industrialization, the result was total disruption—not just partial, but total disruption of the entire country. The reason is very simple: the people who become workers in industry leave their families and come to the city. Not only do they work at jobs previously unknown to them; not only do they earn their livelihoods in a different way; but, above all, they completely escape the social control of their milieu. They now live in the city, uprooted. They have escaped the natural authority of the paterfamilias, and their resources no longer depend on the tribal or patriarchal structure. They have their own individual resources. In other words, the mere summoning of workers causes a destructuring of the family, a setback and ebbing of the economic mode in which the entire population lived, and a certain moral uprooting.

Perhaps we should expand on this point. Traditional societies, we must recall, have no individual morality. Indeed, morality is really the normalized behaviour of the group, with each person individually expected to live as the group does. Once people are torn away from the group and live as workers in industry, then, whatever their level, they no longer depend on the social control of the group. They then need an individual morality to compensate; but they have none.

These people have not gone through the long process. They have not travelled the long road which took centuries in Europe: the long transition from a tribal structure to an individual morality. Hence, the disintegration we perceive wherever an industrial development begins in a Third-World country.

From a social point of view, however, I think that we can also note the transformation of our own society under the impact of technique. And here, I would like to indicate the difference between our society dominated by technique and the societies issuing from the Industrial Revolution—that is, between mid-twentieth-century and nineteenth-century society.

First of all, we have witnessed the appearance of a new class, a new ruling class. Marx was perfectly correct in his analysis of the role of the ruling class, which was the role of the capitalists. The capitalists held the power because they held the economic instrument on which everything depended. But now we see a new ruling class emerging, the class of technical experts, which represents one of the real aristocracies in all our societies. Many sociologists (who by no means have the same perspectives as I) have established the banal formula that in our society success depends not on *what you have*, but on *what you know*. It is more important to be competent, to be a high-ranking technical expert. This assures you a far more important career in society than starting out with a small amount of capital, which may perhaps allow you to set up a small business, but will not really allow you to make it in our society.

In other words, the person who has knowledge—practical knowhow, technical know-how—is the true master in society. At the present, if one's capital is not put to work by people with technical know-how, then it will not count. The person owning capital privately is becoming less and less important, compared with the person who activates his or her capital within the ensembles of technical operations. And this class is the ruling class in that, like all traditional ruling classes, it possesses certain secrets. The technical expert's knowledge is always a mystery to non-experts.

Are we therefore living in what has often been called a "technocracy"? I do not think so. This is, I believe, a misuse of the word. In no society do the technical experts exercise complete political power such as is exercised in a democracy, an aristocracy, a monarchy, and so forth. No, the technicians do not hold the power. However, a certain trend toward technocracy is apparent. For instance, in the Soviet Union, it is more and more the technical experts who directly exercise the power. And this is a question constantly asked in France, for example, in regard to the president of the Republic. Ultimately, the development is toward groups of experts in the most rigorous sense of the word. Although not truly a technocracy, this is nevertheless an aristocracy. And that is why our societies, whether Socialist or capitalist, boil down to exactly the same thing. Our societies are aristocratic societies. Here, I would like to cite an excellent study by the Yugoslav Milovan Djilas on the new class. He was one of the first to perceive (and others followed suit) that the Socialist world also had a new class division. This division is no longer between the owners of capital and the proletariat, but between those who control the bureaucratic, administrative, scientific, and other techniques, and those who do not control them. The former group is truly a new class. Meanwhile, as this new class emerges in our society, we note a trend toward a diminishing opposition between the former bourgeoisie and the working class.

The explanation for this phenomenon is long and difficult. I have just said that the classical bourgeoisie, the bourgeoisie of independent means, has disappeared. The middle class has now moved toward technical functions; and in the working-class world, there have certainly been ruptures. One can no longer compare a longshoreman's condition to that of a highly qualified worker who is actually a technician. However, Alain Touraine, a French sociologist, has observed a significant difference between them; a worker who is only a practitioner can have an excellent practical knowledge of techniques, but he or she will never reach a superior level in society, because only a theoretically trained technical expert can mount that high. Technique must now be known not on the level of its practice, but on the level of its scientific foundations. As long as one has not made this transition, the limitations of improvement on a practical level are quickly reached. Real changes are now only made on a theoretical level by means of a science-based technique.

In other words, we see that technique is modifying the structure of our entire society. We are thus dealing with a phenomenon that not only changes our habits—we fly planes, watch television—but also ultimately changes our political interpretation. Certain parties still deploy their action, and all their propaganda, as if the situation was still one of a dominated class, a poor class, and so on. They thereby preserve Marx's nineteenth-century interpretation of the opposition between the bourgeois class and the working class. But this traditionalism is almost a century behind the times.

I am not saying that there are no more wretched people, I am not saying that there are no more dominated people. There certainly are. But now, power is no longer in the same place. Power is no longer in the hands of the owners of capital. I can develop this idea by analyzing the multinational corporations. Here, as we clearly see, capital still exists; but it is now structured in terms of technical demands rather than in terms of the ideas formulated by a capitalist. Today, there is no longer any owner of capital who plays the part that could once be played by a captain of industry.

Technique thus now appears as both a key phenomenon and as a point of view. I should elucidate these two levels and the difference between them.

Technique is a key phenomenon. In other words, for me, it is a reality, it truly exists. When I speak about technique as I do, I try to present what I perceive. And on the basis of hundreds of observations, I can study technique as a key phenomenon. But at the same time, technique is an instrument of knowledge, a scientific instrument. It offers the central viewpoint in which one must place oneself if one wishes to understand and explain what is happening. Hence, there is a double element: the epistemological element and the reality element. All phenomena in our society are either an imitation of technique or a compensation for the impact of technique. These, I believe, are the terms in which to analyze most of the realities of our

world. By imitation, I mean under the immediate influence of technique, which directly moulds, for example, the administrative system. When the computer enters administrative practice, we must refashion administration to imitate the computer. Hence directly consequent and imitative mechanisms.

At the same time, however, the refashioning necessitates mechanisms of *compensation*, because it is extremely difficult to live in a technical universe. Just think of the countless science fiction stories. The technical universe, which ought to be a rational universe, is an extraordinarily icy, extraordinarily alien universe. People cannot be happy in a purely technical milieu. They can no more live spontaneously in the technical milieu than the astronaut in the cosmos. The astronaut must be powerfully equipped for survival in a space environment. Likewise, a person, no matter who, cannot live totally in this rigid, rational, icy world that is the world of technique. I am not saying it will always be impossible. After all, perhaps people will adjust to a rigid, rational, and icy universe. But for the moment, they have not adjusted. For the moment, a human being is still an extraordinarily irrational creature. It was a tragic error of the eighteenth and nineteenth centuries to believe that people were originally rational beings and that all irrationality must be suppressed. Each person is a creature of passions, of flesh and blood, a creature of impulses and desires. Hence, when a person lives in a purely rational framework, it is impossible to be happy. He or she then requires compensations; and a very large number of factors characterizing the modern world are purely compensatory factors, making up for the impact of technique. We have no choice but to live in this world dominated by technique; but we are forced to find something providing satisfactions elsewhere and permitting us to live otherwise. This state of affairs is felt very deeply, especially by the young, because technique has two consequences which strike me as the most profound in our time. I call them the suppression of the subject and the suppression of meaning.

First of all, the suppression of the subject. Technique is an objectifying power. If a person has learned to drive a car correctly, then it doesn't matter who he or she is, it's all the same. The subject, if you like, cannot indulge in purely subjective fantasies in a technical framework, but must act as technique demands for that one act. The suppression of the subject is transforming traditional human relations, which require the voice, which require seeing, or which require a physical relationship between one human being and the next. The result is the distant relationship. If we compare the countless telephone calls we receive throughout the day with the personal relationship we have with one or two people, we realize that our distant relationships are considerably more numerous. And in distant relations, there is really no subject. Technique brings about the suppression of the subject. This result is accepted by a certain number of intellectuals in France such as Michel Foucault, who feels that one can very easily abandon the subject. And yet Foucault has not

stopped using the first-person pronoun. He still says “I.” That is, willing or not, he considers himself a subject. He says “I do” or “I think.” This is not “one thinks.” This is not just anyone or anything.

In other words, while technique leads to suppressing the subject, we do not experience it at all well. We still feel we are subjects, we still want a very personal, unique encounter. Hence, we are in contradiction with the technical milieu.

Then, there is the suppression of meaning; the ends of existence gradually seem to be effaced by the predominance of means. Technique is the extreme development of means. Everything in the world dominated by technique is a means and only a means, while the ends have practically disappeared. Technique does not develop toward attaining something. It develops *because* the world of means has developed, and we are witnessing an extremely rapid causal growth. At the same time, there is a suppression of meaning, the meaning of existence, the meaning of “why I am alive,” as technique so vastly develops its power.

We know *that power always destroys values and meaning*. Here I would point out remarkable studies done by Friedrich Junger on the conflict between power and meaning. Wherever power augments indefinitely, there is less and less meaning. One seeks a meaning when power allows us to be *ourselves*, without being super-human. Thus, we have these two extremely active factors—the suppression of the subject and the suppression of meaning—both due to technique and both making humanity very uneasy and very unhappy.

I will try to show this interplay of imitations and compensations in certain areas, for instance in art or religion, or perhaps politics. I could start with the example of politics as a field in which technique has completely transformed the conditions of power. What strikes me is, on the one hand, the extraordinary increase in the means of action by the state and, concomitantly, the stunning decrease of power by the individual politician.

The modern state has means that are all technical: administrative means, communications means, control means, means for planning land use, all the information means that no other state has had until now. Hence, we are dealing with a phenomenon that is very different from the one studied by Weber. Weber did see the growth of the state. But nevertheless, for him, the state was always tied to the power of a certain category of politicians. Bismarck, I would say, was ultimately the model of the state. But now we no longer need a Bismarck, we no longer need great statesmen. For with this augmentation of means, we witness the lessening importance of the politician.

The politician is someone who is not a technician, who does not know the means that the state can employ, who depends in all decisions on what the technical experts say and on what those other technical experts, the bureaucrats, do. Every politician must first deal with dossiers prepared by groups of technical experts, and

these dossiers contain a decision ultimately suggested by technical experts. This is the decision that the politician will always make. Once the decision is made, it has to be applied by other technical experts, the administrators. The politician now has a tiny role, especially since the administrators—without even saying anything—can block this decision, so that nothing will happen. We can see this very concretely in France with the president of the Republic, who has generous ideas. He launches certain proposals, but nothing happens.

When I describe the increase in the means of the state and the decrease in the power of the politician, I am speaking of something that has been taking place in both the Socialist and the capitalist world. Indeed, this is one of the points of progressive identification between the two. Within this framework, one can say, for instance, that law is totally losing its validity and significance. It is becoming a technical device for administration and organization. In other words, law no longer has the objective of bringing justice. Today it is an instrument in the hands of administrators, in the hands of the state—an abstract instrument for administering and organizing the society.

We often have the situation (not only in France) of administrators acting outside of any legal rule and then, after acting, making juridical decisions that simply legitimize what they have done. In other words, law is no longer made in advance for the administrator to obey and apply. Law is made *after* the fact to justify what has been carried out. Here, we are patently faced with the loss of meaning—law no longer has meaning—and along with this occurs the disappearance of the subject—for the politician was once the subject. Through two centuries of European history, great individuals forged all history. Today this is no longer true. History is made by the heavy mechanisms of the state machinery and by the social forces that combine with or contradict one another—hence, things that totally escape the power of the subject.

In a word, we are witnessing an imitation of technique by the bureaucratic and technocratic power of the state; and we are witnessing a compensation, I might say, by the *discourse* of the politician. The speeches of the politician are always very important, indeed enthralling, because we think we are in charge of the situation. When we listen to a politician, we agree, we disagree, we contest what is said. But instead of looking at the reality of what is occurring, we are content to have a person on stage who tells us: “I am in charge of the situation,” or we argue that he is not in charge of the situation. Either way we feel we have a subject before us and we feel that we are subjects. That is how we make up for the absence of the politician’s power and our own power. In fact, in regard to technical growth, politicians are utterly devoid of means. They simply cannot reorient our society in a different direction.

That is one brief example. A second example will show what I mean by the disappearance of meaning and of the subject as well as the double movement of imitation and compensation in the domain of art.

Modern art is completely characteristic of this influence, this impact of technique. It is characteristic not only in what the artists produce, but also in the explanations offered by critics for modern art. There is no more subject. We know all the theories on painting. Now we have forms, we have splotches of colour. But this means nothing. There is no theme.

The same holds for the novel. In what was known in France as the *nouveau roman*, the subject was suppressed in the following sense. There was no plot. It was considered totally retrograde to tell a story in a novel; you did not tell a story anymore, and there were no characters either. So we had those utterly amazing novels in which there was never anything but “I, you, he,” and we never knew who “I” was, who “you” were, who “he” was. There was total confusion sentence by sentence, and there was no telling what referred to whom. Hence, we were dealing with the expression of an art that reflected technique, the suppression of the subject.

A book of thoughts on modern art, explaining how to use the computer to paint a picture, showed a reproduction of a painting done by a computer and a painting done by Kandinsky. The author asked: “Who is the artist here, the computer or Kandinsky?” It was impossible to answer one way or the other; and so, it was said, you can see that the computer can do real and authentic painting. I, however, would say that this simply means that Kandinsky paints like a computer. That’s all. It does not mean that the computer paints like Kandinsky. In other words, the painter has taken lessons from technique, he has taken lessons from the instrument, and he reproduces by suppressing the subject.

The same holds true when someone makes music with the computer or when the musician proceeds not by listening to sounds, by creating on an instrument, but by a mathematical development which is translated into certain sounds. This process is totally different from what artistic creation used to be. Now, we truly have the reproduction of technique by art.

Likewise, the suppression of meaning. How many times have we not read, particularly in linguistics and above all in structural linguistics, that we must never seek the meaning of a text. A text simply exists. There are black forms on white paper, and we have to read the text as it is. We have to see the structure of the text, and it makes no difference whatsoever whether it has any meaning or not. Remarkably enough, there is a whole category of artists and intellectuals who fully accept that language has no meaning, that it simply has structures. In a very recent article, a modern linguist actually stated: “Naturally, when we say ‘Please pass the bread,’ this sentence has meaning. But this is quite unimportant because it is only an *ex-*

traordinarily rare case of language.” For my part, however, I think that this is the *habitual use* of language; the structural utilization of language in modern poetry does not strike me as the normal and habitual case. Again this example illustrates the suppression of meaning, and here too, a tendency to imitate what is happening in technique.

But there is also *compensation*. It is not possible to live only in icy painting, in abstractness. It is not possible to listen only to computer music. So, we let off steam in the opposite direction; we dash toward, say, Pop Art, to make up for the technical milieu we live in. We move toward total sexual liberation as a compensation. Erotic spectacles make up for the far too sophisticated technical spectacle. Hence, modern art, in the suppression of subject and meaning, has two directions. It is a pure and simple reproduction of techniques; and it is compensation for technique itself.

My final example of compensation involves nearly all the religious phenomena in the present-day world. We know that there has been a sudden development of religious phenomena. Personally, I do not believe that this development comes (if one is Christian) from the Holy Spirit. It is quite comprehensible, from a purely sociological viewpoint, in the light of technique. Life in our technique-dominated world is extremely frustrating and extremely distressing, so we have to escape it. Religion appears as a means of escape. That is why religion is taking the forms that we now witness, the forms of spiritualism, and the extremely ardent, extremely intense sects of pietism, through which people can separate themselves totally from the world. Technique is coming to dominate the material world, and we are subject to the material world. But we can compensate by way of religious escape, by way of spiritual escape.

We must not forget that this is what Marx meant when he called religion the opiate of the people, when he said that the function of religion is to continue the domination of capitalism over the exploited and to make them believe that in paradise they will have freedom and no longer be exploited. Now, of course, the characters have changed; it is no longer the capitalists and the workers. The phenomenon is completely different, and more abstract. We now have technical organization on one side and human beings, all humanity, on the other side. Religion plays the same role here, allowing us to escape, and to continue living at the same time. Clearly, what is happening in Iran is a compensation for an overly sudden and overly rapid technicization by the Shah. The people could not bear this sudden transformation and have therefore fled into mysticism.

I would like to specify that all the things I have discussed in relation to technique are not primarily theoretical. They are, essentially, observations of what I see as the substratum or, in Marxist terms, the infrastructure of our society. On the basis of these perceptions, I have developed an overall interpretation by means of a theoretical effort. I have set up a theory, which in my eyes, however, is nothing but a

formulation and an account of what I have observed. In no way is this a closed system. I am obliged to take heed of any new fact that I note, and I must then change some element in the original construction. (Here, once again, I think I am being quite faithful to the ideas of Marx, who kept rethinking his theoretical givens in line with economic or political events, for instance the Commune of 1871.)

It is obvious, for instance, that the events of 1968 and the development of the hippy movement led me to revise a certain number of conclusions I had drawn about the effects of technique on humanity. I was, I might say, more pessimistic before 1968 than after. I used to think that we were so trapped in the technical system that we had no further resources to draw on. And then 1968 brought an explosion which opened certain paths and which showed that we were not truly conditioned.

By the same token, the religious movement in the Soviet Union, which is very different from the religious movement in Europe and America, shows that people have been psychologically conditioned, whatever technical methods may have been employed to shape them. This led me to modify a certain number of my judgments.

A further new phenomenon which is equally essential is, of course, the spread of the computer. So long as the computer was a very particular, very piecemeal phenomenon, it could not be a focal point in a study of society dominated by technique. But now I must rethink a good portion of my theory of the world dominated by technique because the computer is having ubiquitous consequences unlike those of any previous technique. In other words, my theory is open-ended. The computer has always been a part of the world dominated by technique, but its extensive application has altered the functioning of this world, and this is something I began analyzing several years ago.

Of course, mine is a general theory in that it allows me to interpret certain facts. I would say that the more facts a theory takes into account, the more valid it is. Heeding as meticulously as possible everything that occurs in our world, my theory of technique, my analysis of technique as a system contributes to understanding more facts, I feel, than most other present-day theories that I know of, including classical Marxism, which is obliged to place most modern phenomena in parentheses. My theory is a means of interpretation, which strikes me as all the more serious in that I am not obliged to modify the facts in order to maintain my doctrine. In reality, the theory I have constructed allows me to verify a large number of facts. To the extent that it is evolutive in itself, I think that I can integrate more and more facts.

Finally, I should state that I have not offered a metaphysical theory or a metaphysical system. I have remained solely on the level of the reality occurring in the present world.

The Present and the Future

A certain number of French sociologists, particularly Georges Friedmann, believe that technique is a new milieu in which people live. But generally, none of them has analyzed this phenomenon or drawn all the inferences from this observation. I have developed this problem of technique as a milieu, and I have interpreted it first on the basis of the experience of the environment in which we live. Principally, this milieu is the city, an entirely artificial world. There is practically no living element here except for the human being. The city is a pure product of techniques of all kinds. In short, we live in a milieu that is totally dead; one of glass, steel, cement, and concrete in which technical products replace the old natural milieu in which we used to live.

This urban people's contact with nature is totally accidental and frequently very slight, for instance when they go on vacation. But when they do take a holiday, they also wish to preserve the artificial milieu. We see vacationers—at least in France—surrounded by countless gadgets such as TV and radio sets; even when in contact with nature, they need to reconstitute a technical milieu.

However, we should not deceive ourselves about the meaning of this milieu. Just what is a milieu? It seems to me (and there are few studies on this subject) that it is not only the place in which a person lives, but also the place from which a means of survival is drawn. Of course, this is extremely simple. But at the same time, the milieu is *what puts one in danger*. Hence, a milieu both makes living possible and also *forces change*, obliges us to transform who we are because of problems arising from the milieu itself.

In other words, I feel there is never a true and total adaptation of the living creature to the milieu. There are successive nonadaptations with challenges, of course, and then new adaptations, hence changes. This permits me to define the milieu for all living beings. We know, of course, that some animal species have vanished for failing to adjust to a changed milieu. Although initially adapting, they ceased to do so.

We have succeeded in overcoming various crises caused by the milieu we live in. Hence, we must pinpoint these two elements. The milieu is that which offers the means to live and also that which poses problems and dangers.

There are rather fundamental consequences of this transformation of the milieu in which we have always lived into a milieu of technique. They are fundamental, I

think, in that we must call upon a theory which is entirely new, the theory of the three milieus. For it is not true that we have passed directly from the natural milieu to the technical milieu. In reality, we have known not two, but three successive milieus: the natural milieu; the milieu of society; and now, the milieu of technique.

The natural milieu was that of the prehistoric period, when there was no organized society as yet and when immediate contact with nature was absolutely permanent. This was really an immediate contact; nothing mediated, nothing served as an intermediary between the human group and nature in the traditional sense of the term. Nature provided a sustenance for human beings, who lived by hunting, by gathering; and nature also provided their principal danger—the danger of poisons, the danger of wild animals, certainly, but also the danger of barrenness, the danger of shortages. This was the first milieu, the one we think of quite spontaneously.

However, humans found a way of defending themselves against this natural milieu, getting the best from it and protecting themselves against it—something that would mediate between themselves and nature. This new means was society. The creation of human society appeared with the times traditionally known as historical. History is tied not to the existence of a natural milieu, but to the existence of a social environment. Society allowed humans to grow strong. The human group became an organized group, a group that has gradually dominated the natural environment, using it as best it can.

What I call the “social period” is the historical period beginning some seven thousand years ago, when human beings succeeded in more or less protecting themselves against nature and taming it, in grouping into societies and in utilizing techniques. During this period, society was the natural milieu for human beings, who remained in close contact with nature (there was a balance between town and country). Techniques were only means, instruments. They were not all-invasive. The great problems were those in the organization of society, the political form to choose, the distribution of labour and wealth, the circulation of information, and the maintenance of cohesion among groups. Thus, society was the environment which allowed human beings to live, and also caused problems.

But while becoming a human milieu, society also turned into something that allowed us to live and then imperilled us. For the chief dangers were now wars, which are an invention of societies. The social milieu still seems like a “natural milieu,” because people to some extent remained in nature. Throughout the historical period, this social milieu marks the intermediary period between the natural milieu and the one we know today, the milieu of technique.

The third milieu, this technical one, has actually replaced society. Not only are natural data and natural facts utilized by technique, mediated by technique; not only are people alienated from nature by technique; but also social relations are

mediated and shaped by technique. In short, the weight of society is far lighter now than the weight of technique.

Of course, when I speak of these three successive milieus for humanity, I am certainly not saying that the appearance of a new milieu eliminates and destroys the preceding one. I have just mentioned that when human beings organize themselves into a society, they still remain in contact with the natural milieu. Society is a means for best utilizing the means of nature and avoiding the disadvantages of the natural environment. By the same token, it is obvious that technique does not suppress nature or society; rather, it mediates them. Nature was mediated by society, with people living in the social group and beyond nature. Now, technique mediates society and, on a secondary level, nature.

Each preexisting element—nature or society—is to some extent obsolete. But it still exists in regard to dangers. For instance, the dangers of natural epidemics were always imminent in the social milieu. However, epidemics were a relatively less serious matter than the dangers inherent in society. Likewise, there are natural dangers and societal dangers that still survive, even though the milieu we now live in is a technical one. There are still typhoons and earthquakes; there are still wars and dictatorships. Yet in reality, all things are already rendered obsolete and placed on a secondary level by the emergence of a new milieu. In other words, the problems raised by a former, obsolete milieu are no longer the essential or fundamental problems.

When human beings were organized in a society, their fundamental problems—and this was the whole question of politics—were the very organization of society, the relations between various societies, the growth of political power, and the control of political power. These issues were far more important than those concerning natural phenomena.

Similarly, today, the technical phenomenon, including both the positive and the negative aspects of technique, the things that both endanger us and increase our power, are far more important than the problems caused by society itself. Hence, we ultimately come to the following conclusion: most of the problems we face today—especially the purely political ones, which relate to the foregoing historical period when the essential milieu was society—are all obsolete by now. These are ancient problems, if you will. During the historical period, it was more important to solve political problems than a certain number of purely natural problems. Likewise, today, it is more important, more decisive, to solve the difficulties raised by technique, the dangers coming from technique, than to solve purely political issues, the problems of elections, the question of whether a system should be democratic or not.

Of course, just as society employed the means of nature, so too technique employs the means of society. Hence, technique aggravates political problems. Polit-

ical power is now in the hands of technical structures that far surpass any power ever held by older political authorities. However, this is no longer a political problem. Whatever the regime, it has its structures in hand. The problem is actually a technical one.

Thus, technique has become a milieu. Beyond that, however, it has also become a system. I am using the term “system” in a sense that has now become customary since Ludwig von Bertalanffy: an ensemble of mutually integrated elements, situated in terms of one another and reacting to one another. On the one hand, every element in the system is understood only in terms of the whole, in terms of the system. Any variation in the whole has consequences for the integrated parts. And reciprocally, any change in the elements affects the whole.

This, I feel, is a new view of technique, with a difficulty that I have already pointed out: when I speak of technique as a system, I mean two different things. The first is that technique has in fact become a system. This means that each individual technique is actually integrated in a totality; each datum of technique must be understood in terms of this totality. Hence, there is actually a system of many techniques. Secondly, when I say that technique is a system, I mean that the concept of “system,” used both philosophically and sociologically, is a means of interpreting what is happening technically. It is essentially an epistemological instrument allowing us to know and understand technique better. Hence, the term “system” designates both the fact and the instrument of comprehension.

This interpretation of technique as a system has enormous consequences. I will mention only two.

First of all, technique as a system obeys its own law, its own logic. In other words, we are dealing with an autonomy of technique, a closure of technique in itself. There is a very small margin of possibility for intervention, for outside action—economic, political, or whatever—on technique. Furthermore, technique is autonomous in regard to morality, politics, and so on.

On the other hand, it is involved in a process of self-augmentation. Technique augments itself for its own reasons and with its own causalities. We would obviously have to go into a long explanation of how the person who interferes with the milieu of technique and the system of technique intervenes to some extent as an instrument of technique and not as its master. Technique has the power of self-augmentation, which is intrinsic to it.

We encounter an apparent difficulty here. The system of technique progresses by virtue of its intrinsic laws, and there is an autonomous process of organization. But at the same time, this can occur only by means of constant human decisions and interventions. By describing the system as autonomous, I do not mean an autonomy capable of directing itself and reproducing itself without human intervention. What happens is that the system determines the one who must make the deci-

sions and who must act. The *sole* actions and decisions to be allowed are the ones that promote the growth of technique. The rest are rejected and quickly forgotten. Those who make the decisions are neither aesthetes, skeptics, critics, nor people free of obligation. Since childhood, they have been accustomed to technique: they feel that only technique is important, that only progressive thinking is valid; and they have learned techniques for their work and their leisure. In this way their decisions always support the autonomy of technique.

Here we have a problem. Like any system, technique ought to have its self-regulation, its feedback. Yet it has nothing of the sort. For instance, if one observes a set of negative effects caused by a group of technicians, one should not only repair the damage, but go back to the origin of the techniques involved and modify their application *at the source*—for fertilizers, say, or certain work methods, or chemical products. But this action is *never* taken. We prefer to let the drawbacks and dangers develop (on the pretext that they are not fully demonstrated) and to create new techniques to “repair” the problems. In fact this actually entails a positive feedback. There is no self-regulation of any kind in the system of technique. This does not mean that it is not a system. It does, however, mean that we are confronted with a system that has gotten out of hand—a system incapable of controlling itself. Hence, we cannot expect any rationality, contrary to what we may believe. And this, I may say, is going to be the chief danger, the chief question when we think of ourselves within the system. That is a first set of consequences.

A second set of consequences is that, contrary to what we usually do, we can no longer understand technique *per se*. No technique can be understood in itself because it exists only in terms of the whole. Yet that is what we always do when, for instance, we consider television. We ask: “What are the effects of television? Can one escape the impact of television? Can we master television?” And the reaction is always totally elementary: “But I’m not the least bit addicted to television. I can switch off my set whenever I like. I’m completely free.” We respond as if television were a separate phenomenon, likewise independent of the system. The same is true for the automobile. Observers are investigating, for example, the effects of the car on an individual or on an entire populace, as though the car were not located within the system of technique, a part of an extremely complex set of techniques.

However, if we wish to understand television, we have to place it within the system of technique, that is, television in relation to advertising, in relation to the fact that the world I live in is turning more and more into a visual world, or that I am constantly learning that only the image that I see corresponds to a reality or that the world in which I am likewise makes constant demands by way of a growing consumerism. This is the same world in which I am obliged by the group in which I live to keep up to date on whatever takes place. I am by no means free to watch my television set or not to watch it, because tomorrow morning the people

I meet will talk to me about such and such a program, and I do not want to put myself on the fringes of the group.

Likewise, I am part of a world in which the technical operation requires a certain amount of knowledge. I cannot enter a milieu or a job if I do not possess a certain quantity of knowledge, and a good portion of this knowledge is transmitted to me by television. Hence, in reality, I am not independent of my television set. With the set belonging to me, I am integrated in a totality that is the society dominated by technique, of which television is a part, and I am absolutely not free in my choices, in my decisions.

Naturally, I can decide not to watch a certain movie or program. But am I really sure that I can decide? For I am also a person who spends my day working at a generally technical job that is quite uninteresting, repetitive, and anything but absorbing. In the evening, what do I have for relaxing, for relieving the buildup of nervous tension that I have experienced all day long? Television. Hence, in a sense I watch television as a reward at the end of the day, and this too is caused by my living in this milieu.

Therefore, I am absolutely not independent in regard to television; and it is no use trying to understand the effect of television as an isolated phenomenon. The true problem is the situation of human beings in the totality of the society dominated by technique.

I already mentioned the absence of regulation in the system. This non-self-regulation and another feature of technique, its ambivalence, prohibit any accurate forecasting of what may happen. We are always left with two hypotheses: Huxley's brave new world; or else the "disasters" foreseen by science fiction or the Club of Rome. Neither possibility is predictable.

In fact, Huxley's brave new world, where everything is normalized, is, as I will explain later, absolutely impossible. On the other hand, the disasters predicted by the Club of Rome strike me as equally improbable since all precise scientific forecasts about the world dominated by technique seem false to me. They are false because the system has no self-regulation, and we are incapable of foretelling the actual developments.

Then there is the ambivalence of technique, the fact that each emerging technique brings either positive effects or negative effects mixed in with the others. It is extremely simplistic and elementary to think that one can separate them, or to claim that one can suppress negative effects and retain the positive ones. Unhappily, this is never the case. I recall that when nuclear energy was launched, people simplistically said: "All we have to do is stop making atomic bombs and produce nuclear energy, and everything will be all right; we'll be pacifists." Alas, we know that the development of nuclear plants presents yet another danger and that ultimately every such plant is a potential atomic bomb.

Hence, the effects are by no means clearly separated. When we think of chemical products, we must bear in mind that a chemist comes up with a product of which we know certain effects. The secondary effects are only revealed a long time later; we are unable to discern them in advance. The same is true of fertilizers, medicines, and so on.

Thus, the positive effects and the negative effects of technique are closely, strangely interrelated. We may say that each technical advance increases both the positive and the negative effects, of which we generally know very little. I would therefore say that I cannot endorse either Huxley or the Club of Rome because of the margin of unpredictability. No scientific forecast seems certain to me. Nor can we now say that technique will keep progressing from innovation to innovation at the rate it has moved during the past thirty years, or that, on the contrary, we are veering toward a period of stoppage, of technical stagnation, which would obviously give us a certain amount of time, a delay. Clearly, a work like Huxley's or a cry of alarm like that of the Club of Rome is meant to alert us, to warn us of certain possibilities that lie ahead, but there is no way that we can tell which possibility is bound to come true.

Still, one thing seems absolutely certain: the difference and opposition between the development of the system of technique on the one hand and society and human beings on the other.

People have said, and I myself have written, that our society is a society dominated by technique. But this does not mean that it is entirely modelled on or entirely organized in terms of technique. What it does mean is that *technique is the dominant factor, the determining factor within society*, which is altogether different from Huxley's brave new world.

Society is made up of many different factors. There are economic factors, there are political factors. Human beings, as I have said, have an irrational element. Hence, being irrational and spontaneous, they are not fit for technique, and society, being habituated to ideologies, being historical and a result of the past, and existing in an emotional world of nationalisms, is as irrational as humanity and as unfit for technique.

The result is a shock, a contradiction, a conflict between the system of technique, which augments according to its own laws, and the society dominated by technique. To follow a comparison that I employed to shed light on the relationship between technique and the system of technique, it is almost like cancer developing in a live organism. But I do not mean to say that technique is a cancer; this is just an analogy to present the problem more effectively. Cancer, the cancerous cells, proliferate according to their own law. Cancer increases with its own specific dynamism; and it does so within a live organism, within a different set of cells, which

obey different laws and which will be disturbed, sometimes completely unbalanced and disrupted, by the development of cancer.

The system of technique is rather similar in that it is located inside the society dominated by technique. Hence, one may say that wherever the system of technique advances, there is a greater disturbance of the social milieu and the human groups. In other words, there is a growth of what might be called a certain disorder, a certain chaos. Hence, contrary to what we might imagine, technique is quite rational, the system of technique is quite rational; but it does not subordinate everything to this rationality. There continue to be areas that are absolutely not subject to the system of technique; hence, some kind of crisis occurs. That is why I simply do not believe in the possibility of Huxley's brave new world. What we actually observe is a technical order, but *within* a growing chaos.

Will this state of affairs continue? Does this situation have no solution? As a matter of fact, we do not see any possible historical solution. It is quite simplistic, quite elementary to say that "we have only to adjust to technique" or "society has to be organized according to technical means." What this actually signifies is that during the five hundred thousand years of our existence, we have developed in a specific direction, and now we are suddenly being asked to change. Well, I am simply saying that we cannot suppress half a million years of evolution in a few short years. What we can predict for sure is that if the growth of technique continues, there will also be a growth of chaos. This does not at all mean a void or a crumbling of societies, but difficulties *will* increase.

Let us apply what we just learned about the milieu. We have developed (and here I might allude to Toynbee's theory of challenge) only when encountering challenges, only when meeting new circumstances to overcome. In a sense, the new challenge to us is our own invention, namely technique. But this is not necessarily negative. We are called upon to surmount technique just as we have surmounted the difficulties of society or the difficulties of primitive nature. In short, this is an expression of life, for life is a series of imbalances successfully restored to a state of equilibrium. Life is not something static that has been organized once and for all. Hence, this challenge of technique may be positive so long as we fully understand that it is a challenge to be overcome and that it is a fundamentally serious issue.

If, for instance, human beings had not taken seriously (and no intellectual interpretation was necessary) the challenge posed by cave bears, then they would very simply not have survived. Then, it was an immediate challenge, which they experienced constantly. At present we are obliged to travel a long intellectual road in order to understand the crux of the matter.

Given the current extent of relations between the system of technique and the society dominated by technique, and the extent of the true problems raised by technical development, no political action in the normal, strict sense of the term

is adequate today. On the one hand, the politician and the political institutions are totally incapable of mastering technique. They are incapable of normalizing the techno-social phenomena and steering them. Our institutions were invented between the seventeenth and the eighteenth centuries, and they are adapted to situations that have nothing to do with what we now know. One need merely recall the total impotence of the legal system in fighting pollution. Obviously, we can always issue decrees and pass laws, which sufficed for the problems of society one hundred years ago. But none of this is effective against pollution, and I could multiply the examples along these lines.

Likewise, as we have already said, the politician is totally unfit for technical problems. But just as we cannot master technique, so too the politician cannot rationalize behaviour or find a new organization for society. For this would require the most totalitarian and the most technical government that has ever been imagined. However, we are not about to create such totalitarian or technical governments. At most, we have political authorities that are gradually and with difficulty adapting a few old governmental methods to new instruments. Indeed, when politicians realize the full scope of the problem, they become totally impotent. Hence, I believe that politicians can change neither technique nor human beings and society. In any case, for the challenge now facing us, we cannot expect any response along the road of traditional politics.

Politics is in no way acting upon technique and its problems. It is actually providing a framework for the events and trying to respond to the circumstances. In short, there is no such thing anymore as largescale politics. It is quite astonishing to see the extent to which the great ideological systems—for instance the Communist systems in both the Soviet Union and China—have vanished, giving way to step-by-step policies. The USSR and China are totally falling in line in terms of the development of technique, and are therefore in the same situation as the Western world. Indeed, I believe that modern society has two entirely different, entirely distinct levels: the level of appearances and phenomena; and the level of structures.

In appearance, there are many movements, changes and events. Not so long ago the World Council of Churches investigated the question: “What is Christianity becoming in a changing society?” As if—and we all believe this—as if change were the fundamental trait of our society! The only thing that is really changing is appearances. It is obvious that the Soviet influence, say, in Africa, is tending to replace the Chinese influence of the nineteen sixties. Granted, this is not unimportant. But ultimately, the Chinese and the Soviets are more or less doing the same thing. Hence, we witness a large number of events which always boil down to a certain number of rather simple elements. The surface may seem very agitated, but the depth remains extremely stable. One can draw a well-known comparison to the

ocean: the surface may be extraordinarily whipped up with waves and a tempest; but if one descends fifty metres, everything is calm, nothing is stirring.

Sociologically, I would say, we actually have three levels: the level of events and circumstances, which is always the level of politics; the level of far-reaching changes, for instance economic phenomena, which are longer-lasting and less circumstantial; and the level of stable structures, which, I believe, are given us by technique.

Technique fundamentally structures modern society. It is not that technique does not change. When I say it is stable, I am not saying it does not change. But it obeys its own law of evolution, and it is only very slightly influenced by events. It can be limited in its own development. Clearly, in the world we live in, we do not know everything that technique would allow. Blockages crop up—for instance, economic ones. In France, we know the contradictions in the National Health Service. The costs are so high that a choice must be made between extremely sophisticated medical techniques and an increase in hospital beds for the most common illnesses and operations; we cannot have both. Hence, in the basic structures, there are blockages coming from the two other levels.

However, there is no fundamental change. Technique does not obey events in any way. Yet obviously, what interests us, as people taken with information, with the news, with everything exciting and fascinating, is the events. However, the more fascinated we are by political circumstances, speeches, and ideologies, the more we leave the structures free to function as they do. We can focus on an important political discussion about the Third World, but in reality, the power of technique expands in regard to the Third World too—and this we do not see. We are so excited by events, by circumstances, by the latest news, that in regard to fundamentals, we always feel we have time. Even if we do not understand the stakes of the game in regard to technique, we always feel we have a great deal of time ahead of us. But this is not true. If technique keeps growing, then disorder will keep growing; and the more disorder increases, the greater our fundamental danger.

May one say that there is no help, no hope, that all is lost and we can only let things happen? By no means! I think that humanity—as I have already said—has frequently been challenged and endangered in an equally fundamental way, and at first sight, people saw no way out. In 1935, we saw no way out from the Hitlerian dictatorship. It was something terrifying, on which we seemed to have no grip. Likewise, those who were critical of Stalinism saw no way out. We were convinced, myself included, that things would go on in exactly the same way after Stalin's death. All the same, there were a certain number of changes. Hence, we may not see any way out for now, but we should not claim that none exists.

I feel that, in any case, there are groups who hold out some hope. On the one hand, the groups from certain milieus that express the chaos in the midst of which we live. That is, the groups, the milieus of a certain age—youths, for instance—who feel the shock of this society most strongly and most harshly and who tend to reject it, even if, for the moment, no solution can be found.

Then there are the groups who are beginning to be conscious of what is happening. I will limit myself to discussing the antinuclear movements, because all this is very well known. The technical validity or nonvalidity of their arguments does not matter. The important thing is to be capable of posing the problem on the most basic level. Even if one can affirm that the nuclear plants are totally harmless, the real question is one of society's choice; and the antinuclear groups would therefore be right. Likewise, the ecological movements, the consumer movements, the neighbourhood associations. The latter are citizens' groups who feel that we don't get rid of problems just by electing a local government. After all, the city council can only run the municipality. Thus, we have groups who feel that everything concerning their neighbourhood life is of interest to them, and they ask to receive all documents, they discuss all the decisions of the municipal council. They are capable of arousing public opinion in certain cases. Generally, they form a mechanism that I might call a spontaneous referendum. I find this a new phenomenon and a very important one in the political world.

Then, we have to take the women's movements into account. They strike me as extremely serious and fundamental—so long as their objective is not to become masculine! That is, so long as women understand their specific role and do not wish to play the same role as men in the same work, the same framework, and the same techniques. If women become men, what is gained? On the contrary, what strikes me as fundamental is that in a society in which the masculine extreme is crystallized in technique, the feminine part, which, I would say, is focused on sensitivity, spontaneity and intuition, is starting to rally again. In other words, I feel that women are now far more capable than men of restoring a meaning to the world we live in, of restoring goals for living and possibilities for surviving in this world dominated by technique. Hence, the women's movements strike me as extraordinarily positive.

In this list of groups, I have not mentioned the proletariat or the Third World. In European countries, thoroughly permeated with Marxist thought, the proletariat was the bearer of hope for the world because, even without precise knowledge of Marx, people saw the proletariat as the most wretched, the most "alienated," people who would be forced to revolt in order to wipe out their own inhuman condition. The proletariat is, in general, thoroughly integrated in the world dominated by technique by organizations like trade unions or political parties having purely industrial views and goals, and by situations that involve the proletarian

in technique. Hence, the proletariat still thinks about issues in terms of the social and economic situation of the nineteenth or early twentieth centuries. Movements like trade unions do not see the new problems at all. For now, at least, and until a new consciousness is reached, I do not believe that the proletariat offers a future for humanity, any more than the Third World does.

We have already indicated that the Third World has progressively lost its specificity as the techniques introduced in those countries upset whatever was unique and singular about their cultures. I think that it is a mistake to investigate the transfer of technique. It is not enough, as is all too often said, to act with great care, to seek ways of adjustment. The transfer of technique can take place, and individuals and even certain groups in the Third World can be psychologically adapted. But in reality, the shock of technique causes a total breakup of the society. Hence, new studies on the transfer of technique will not solve this problem. The question is whether the civilizations of the Third World—India, Islam, and so on—being totally different from the Western world, are capable of absorbing Western techniques and integrating them into a totality of culture and civilization that is utterly new.

The shock of absorbing techniques has apparently destroyed the specific character of most of these societies. When one tries to rediscover the cultural roots, they seem so backward and impossible that, in the eyes of all humanity, one is dealing with an absurdity. I am thinking of what has happened in Iran with the Ayatollah Khomeini—his desire to return to a pure, hard Islam, indeed to the Middle Ages, with a rejection of all techniques, which is unthinkable and unacceptable. There is no integration of techniques into a society with a different culture. It is an either/or situation: either technique or our Islamic society. That is the conflict of Iran today. Obviously the Ayatollah Khomeini's position is absolutely untenable. He is bound to be defeated because one can no longer live without accepting techniques. Iran will have to renounce the specific nature of an Islamic society.

There is, however, a further element which makes me feel that the Third World is no longer a resource in regard to the challenge facing us. You see, the very mentality of the inhabitants of the Third World has been transformed. On the one hand, the elite have only one idea: to develop technique, to enter the mainstream of technique. Both intellectuals and politicians are fascinated with this notion, just as the rich of the Third World are interested—in the most banal sense of the term—in developing Western techniques. In both cases the goal is to enter the circuit of Western technique.

On the other hand, for the poor in the Third World, technique clearly seems like a hope, the hope of overcoming poverty. In the mythology of the Third World, technique has succeeded in making the West rise from its own poverty. Therefore, they believe all they have to do is adopt Western techniques, and they too will profit

from this development. One cannot contradict this notion, in the light of how poor and wretched the people of the Third World are. But they fail to realize that they are launching the twofold process of destroying their culture and entering into a universe that is totally alien to them, a universe that will bring disruptions on a psychological level and that will in fact cause, in all areas, far more serious disruptions than in the Western world. The West has adjusted gradually to its development of technique—and we know how badly and with how much difficulty. It has taken us two hundred years. How then can the Third World endure the shock, psychologically and sociologically, when it is asked to absorb this technical apparatus and this system of technique in just a few years?

Within this international framework, and especially considering what we have just said about the Third World and the gradual destruction of its unique cultures (despite the ideologies of, for example, Africanism), we must, I believe, realize that the true powers in our time are no longer the rich countries or the populous ones, but those possessing the techniques. The term “rich nation” instantly brings to mind the Arab countries with their oil. Of course, these countries do impress us greatly with their influence on all economic and political life. In fact, however, the accumulation of their wealth is not bringing any true interior development or any sort of independence from the West.

It is, I feel, very important to realize that these riches do not permit the emergence of a new type of society. They simply allow the adoption, the purchase of what the West has already done. One need only think of the very characteristic example of buying ready-made factories, delivered “key in hand,” so to speak, and set up in the Arab countries. What is this? In fact, it is the implantation of Western techniques in the Arab world. Likewise, in the terrible war between Iraq and Iran, everything is Western, including the materials and the strategy. Nothing remains of Arab military culture.

Hence, the wealth of Arab countries does not give them real power. The countries with real power are those that have the technical instruments, that are capable of the technical progress that is confused with *development*. It is not real development, but simply growth, a growth of power. We ought to recall the difference that many sociologists and economists make between *growth* and *development*. Schematically, we may say that growth is chiefly quantitative and development qualitative. In an economy, aiming at growth means trying to produce more cement, more iron, or more wheat. Aiming at development means looking for the most balanced and least harmful economic structure, recognizing the value of the statement “small is beautiful,” and achieving higher quality in consumption.

This distinction between growth and development obtains equally for politics and societal organization as well as for economics. So far, however, technique has

always emphasized growth and the growth of power. And this power is both economic and political, of course.

By the same token, a large population does not imply real power. (This is the problem of the Third World.) People never stop emphasizing the dreadful injustice that exists because of the difference in standards of living between the Western world and the Third World. But this difference is accentuated by the very rapid advance of technique in the Western world. It is not simply the dynamics of capitalism, but rather the development of techniques. Hence, the axis of power is determined by the progression of techniques. At the same time, however, these techniques entail certain similarities. In order to exploit and to utilize techniques as much as possible and to maximize their yield, we must be able to organize society in a certain way, we must be able to put people to work in a certain way, and we must get them to consume in a certain way. Hence, the ideological oppositions are growing less and less important. The ideological and political conflicts in the strict sense of the term are rendered obsolete by the identical nature of the techniques.

Techniques are pretty much the same in the Soviet Union, the United States, and Europe, with only slightly different rates of growth. China is now moving in the same direction, evolving in the same manner, and is attempting to technicize progressively. As a result, political structures are growing more and more alike, as are economic structures. It is no coincidence that the Soviet world is beginning to talk about a market economy, a natural formation of prices through competition. Not that the capitalist system is better; rather, both sides are looking for the best forms, the most effective ways of using techniques. Likewise, the Western world is talking more and more about economic planning. Hence, an obvious convergence, with identical objectives, namely technical power, and the domination and utilization of raw materials for technique. Ideologies no longer count. Whether the discourse is Communist or capitalist, liberal or Socialist, in fact, everyone is obliged to do more or less the same thing.

I could give countless examples of these facts. For instance, when the Swedish Socialist Party was beaten by an antinuclear platform, the Liberal Party, on coming into power, realized it simply could not carry out the electoral promises it had made. Technique won out, and Sweden was forced to begin constructing nuclear plants.

This example shows the convergence of the technically powerful nations; however, this convergence does not automatically guarantee peace. All we can say is that ideological politics is now secondary, and that the conflict between the powers comes from an excess of power, an excess that extends beyond the national boundaries. In the past, people offered long explanations for the conflicts between capitalist nations, saying that capitalist production had to conquer new markets throughout the world. Hence, it was economic output that caused wars. Now, however, the risk is obviously the excessive power of the three (and soon four) great

creators of technique. They will soon find themselves facing one another in such a way that a conflict will be inevitable—the conflict over the use of raw materials, for example. It is a question of life and death. This, ultimately, is what endangers world peace, and nothing else.

My interpretation of the phenomenon of technique as a milieu, as a system, has led me to get involved in society, as I tried to explain earlier. However, it was never my goal to go back, to declare that technique must be eliminated. I was looking for a new direction. So I tried to reach what is known in France as “the base” of society. “The base” is the average person, the one who simply lives his or her own life, who has no great ambitions or special intellectual development; but who still has something like spontaneity, openness, often allowing him or her to understand the things that are happening, so long as they are shown, and to understand them in such a way that he or she is relatively better prepared than intellectuals, technical experts, and executives to take the values of life seriously. All this led me to concentrate on local initiatives—that is, to rely on direct and close relationships to form groups for investigating the issues that require people to take a stand on technique and the system of technique, but which are also very concrete.

Let me give you an example of ecological action in the region of Aquitaine. I tried to get intellectuals to develop a critical attitude so that they would question the very techniques they were studying. These intellectuals included scientists, lawyers and administrators. The point was not to reject administrative technique or juridical technique, but to clearly know what we were doing by employing them; to know the visible, immediate results and the secondary and less visible drawbacks. In other words, very close attention must be paid to any technical interference in the social or psychological domain. It was a great consolation for me to see people not going backward but realizing that the most highly developed technical means are not necessarily the best, even though they are the most efficient. I am thinking of insights shown by the doctors I worked with. They saw that many tests, although highly developed from a technical point of view, are ultimately no more certain than the diagnoses that were once made by more elementary procedures, but demanded greater personal commitment from the physician. In other words, a very large number of laboratory tests and clinical examinations are absolutely useless. They are technically highly developed, but often very dangerous and sometimes very painful. Ultimately physicians and surgeons (I am speaking of the most highly qualified) recognize that the results and the knowledge attained are no greater. This is an example of a critical stance in regard to the very techniques we use.

At the same time, I was obliged to remain on the fringes with all my activities. Again and again, people tried to draw me into political circles, saying that some-

thing was happening politically that might lead to the acceptance of my analyses! This is a trap for the ecological movements. I feel that any action pertaining to the milieu of technique must remain on the fringes because this milieu is extraordinarily enveloping and, I might say, extraordinarily seductive. My work, therefore, is obviously on a small scale; it requires much effort for apparently meagre results. While crowds of people adopt all the technical developments, we can act only on individual levels. Hence, this is a true artisan's work. Nonetheless I am fully convinced that my slow labour, involving small numbers of people, is actually a point of departure for an internal change in society. To use big words, confronted with the phenomenon of technique and the new milieu we live in, we must have "mutants." Not the mutants of science fiction—the technical human being with a robot's brain—but quite the opposite. To be a mutant a person needs to become someone who can use techniques and at the same time not be used by, assimilated by, or subordinated to them. This implies a development of the intellect and a development of consciousness which can come about only for individuals, but it is the only development possible.

This leads, obviously, to the problem of educating children. For a longer or shorter period, our children and grandchildren, we must realize, will be living in a technical milieu, and we cannot even for one second imagine that we can raise them without some contact with it. Once again, the point is not to refuse to admit that technique exists, because it does exist; it is our milieu.

This goes back to what I was saying about the milieu. I know that it has in fact happened that when historical societies organized, small groups or sometimes individual people absolutely refused, saying: "We want to keep living like monkeys in the forest." Of course, they could do so, rejecting the development of society. But this was no solution. Those who continued living in the forest became extinct.

In the same way, one cannot claim that we can go on living as in the nineteenth century. We cannot bring up our children as though they were ignorant of technique, as though they had not been introduced from the first into a world dominated by technique. If we tried to do that, we would make total misfits of our children, and their lives would be impossible. They would then be highly vulnerable to the powers of technique. Yet we cannot wish them to be pure technical experts, making them so well fit for the society dominated by technique that they are totally devoid of what has until now been considered human.

Hence, I think that on the one hand we must teach them, prepare them to live *in* technique and at the same time *against* technique. We must teach them whatever is necessary to live in this world and, at the same time, to develop a critical awareness of the modern world. This is a very delicate balance, and we should not delude ourselves. We are preparing a world that will be even harder to live in for our

children than it is for us. For us it is already complicated. And our children will be forced to deal with even more difficult situations.

Let me tell you of an experience that strikes me as dreadfully enlightening in its cynicism. I am rather well acquainted with the president of Electricite de France (the French national utilities company which is also responsible for the nuclear power plants). I was talking to him, discussing the dangers of nuclear plants point by point. Finally, in regard to two items in particular, he acknowledged that there were indeed some insoluble problems. And then he made the following extraordinary comment: "After all, we have to leave some problems for our children to solve."

That is the cynical attitude of the technical expert who knows his limits; it reveals that our children are indeed going to have difficult problems. Hence, in the immediate future, I feel that our children should be like all the others, go to the same schools as everyone else. But, at the same time, we should try to set up an alternative school, as it were, a parallel institution, where children learn to live differently and, on an existential level, learn to question the certitudes taught them in regular schools. Of course, this can be done only in communities of parents. One simply cannot provide such an orientation for life in a purely familial framework; and one cannot do work of this sort all alone with one's own children.

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