FROM ONTOLOGY TO TECHNOLOGY. Tendencies of Industrial Society.

The following pages contain ideas developed at the time of a course given in 1958-59 at the Ecole Pratique des Hautes Etudes (Practical School for High Studies); they make up part of a book, to appear, devoted to the study of certain basic tendencies of the most evolved industrial society, the United States in particular. These tendencies seem to engender a mode of thought and behavior which represses or rejects all values, aspirations and thoughts which do not conform to the dominant rationality. Consequently an entire dimension of human reality is suppressed: the dimension which permits individuals and classes to develop a theory and a practice of going beyond and to envisage the "determinate negation" of their society. Radical criticism, effective opposition (intellectual as well as political) are henceforth integrated into the status-quo; human existence seemb to become "one-dimensional." Such an integration cannot be explained only by the emergence of mass culture, of the Organization Man, the Hidden Persuaders, etc.; these notions belong to a purely ideological interpretation which neglects the analysis of the fundamental processes: the processes which undermine the base on which radical opposition can be developod.

This atrophy of the base even of historical going beyond, this neutralization of the negative forces, which appears as the supreme achievement of industrial society, are these things rooted in the very structure of technological civilization, or are they only the work of its repressive institutions? Has technique-ism so profoundly transformed capitalism and socialism that Marxist notions as well as anti-Marxist notions of development are invalidated? Does the atrophy of the process of going beyond foretell the possibility of an absorption of the negative forces, the mastering of inherent contradictions by the technological domination of the world, by a level of life always higher and higher, by a universal administration of society? Or rather does it announce the stage in the course of which quantitative change will become qualitative?

Such are the questions which have guided our analysis: it has for its point of departure the political-economic transformation of technical society and examines, on this basis, the different forms of the atrophy of the process of going beyond in normal behavior, in language, in traditional culture and in neo-positivist and analytic philosophy.

When the new scientific method destroyed the idea of a universe organized in relation to one end, one final structure, it also invalidated a hierarchical social system where the occupations and aspirations of the individual were predetermined by final causes. The new science, in its neutrality, made an abstraction of an organization of life which deprived the great majority of men of freedom. In an effort to establish the physical-mathematical structure of the universe, it also made an abstraction of the concrete individual, of the "sentient body." Such an abstraction was

moreover fully validated by its result: a logical system of propositions guiding the methodical utilization and transformation of nature and tending to make of it a universe controlled by the power of man.

Reality was reduced (or reducible) to physical-mathematical structures, "truth" had no relation to anything unless it could be measured and calculated, or if it was a proposition expressing these conditions. This reality is given according to its own laws (even if these laws are only "statistical"). Man can understand them, act on them and be concerned by them, utilize them, without there being the laws of his own social or individual existence; they govern him only to the extent that he himself is pure physical-biological matter. Man, in all his other aspects, is eliminated from nature, or rather, the reality which sees and recognizes the scientific method is a reality independent of individual or social factualness.

It may be that one is justified in speaking of the "metaphysical foundations" of modern science. Thus recently, A. Koyre has strongly put the accent on the ontological aspects and the non-empirical aspects of Galileo's science. The Pythagorean, Platonic, and Aristotelian tradition remains, at least up to Newton, powerful enough to endow the scientific method with a "philosophy." One can say that the notion even of physical laws which are universal and susceptible to unification, preserves at its first appearance the idea, elsewhere proscribed, of finality; this however becomes a finality more and more empty, a finality of the order of calculability and predictability pure and simple, which has neither telos in itself, nor a structure tending toward a telos. It is this calculability, this predictability, in relation to their own movements and according to their own terms, relatives to man to the extent that he calculates and predicts the movement of the mechanism, which constitutes "order" (though probably a statistical order only.) The density and opacity of "objects", of objectivity, seems to be evaporated. There is no more nature or human reality as substantial cosmos. In the evolved scientific method, thought is as if it were purified of the objects which oppose it: they remain only as "convenient intermediaries", as "models" and "invariables", as "obsolete cultural postulates." (V. Quine, From a logical point of view, Cambridge, 1953, p. 44) Or, to cite once again an operating formula: the matter of physics is no more the measure of "objective qualities of the exterior and material world, they are only results obtained by the accomplishment of such operations". (H. Dingler, Nature, vol. 168, 1951, P. 630) The totality of the objects of thought and of practice is now conceived "projected" as organization: beyond all sense certitude, its truth is a matter of convention, of effectiveness, of "internal coherence"; and the basic experience is no longer concrete experience, social practice in its unity, but administrative practice, organized by technology.

This evolution reflects the transformation of the natural world into the technique world. It is more than a word game if I say: technology has replaced ontology. The new mode of thought annuls the ontological tradition. Hegel summarized the idea which is at the center of this tradition: Logos, Reason, is the common denominator of the subject and the object, as much as synthesis of opposites; this synthesis is realized in the theoretical and practical struggle; in the transformation of the given world into a free and rational world: this is the work of History. With this idea, idealistic ontology embodied the tension between subject and object, the opposition of one to the other; the reality of reason was the evolution of this tension in different modes of being. Thus the system which was the most resolutely monist maintained the idea of a substance which unfolded itself in subject and object, that is to say the idea of a double, dualist, antagonistic reality. The transformation of natural reality, into technical reality, undermines the very basis of this dualism. It is true that modern scientific philosophy departs from the Cartesian notion of two substances: res cogitans and res extensa (thinking things and things in space or material things). All the time, as "matter," which is made of the latter, is more and more made up of mathematical formulas (whose application, in turn, "remakes" this matter), the res extensa loses its character of substance. It becomes a mathematical structure in itself, just as the Ego, res cogitans, becomes more and more the subject of observation and quantitative calculation. A new monism appears, but which is this time a monism without substance. The tension between subject and object, the dualistic and antagonistic character of reality tends to disappear and with them the "two-dimensionality" of human existence, the capacity to envisage another mode of existence in reality, to go beyond factuality toward real possibilities. The faculty for living according to two dimensions was one of the constitutive characteristics of man in pre-technological civilization. This going beyond factuality toward a qualitative change from reality in reality was very different from the religious transcendence which went beyond even reality, also different from scientific transcendence, which went beyond factuality only toward quantitative transformation. In the technological world, the capacity to understand and to live this historical transcendence is gravely atrophied; man can no longer exist in two dimensions; he becomes a one-dimensional being. There is no more than a single dimension of reality which is, in the strict sense of the word, reality without substance or rather, whose substance is in the form of technique, which becomes its content, its essence. All significance, every proposition is validated within the context of the behavior of men and of things--a one-dimensional context of effective operations, theoretical and practical.

One might believe, at first glance, that the "denaturalization" of reality is masked by the terrible force with which the technical world resists the will and thought of the individual; that the pure and simple weight of the matter on which man has to act and which acts on man has never been so overwhelming. But this weight is of man himself. It is by the practice of man himself that the

technical world is congealed in a "second nature", schlechte Unmittelbarkeit (bad immediacy), more hostile perhaps and more destructive than the first nature, pretechnical nature. Technical reality has no other substance than the subject. But the subject which makes the technical reality of the world in its freedom and its reason exists only in power, "in itself" but not "for itself." Consequently, technical reality is deprived of its logos, or rather its logos appears as empty of reality, as a logical form without substance. Contemporary positivism, semantics, symbolic logic, linguistic analysis, define and refine the universe of discourse, from the usage of technicians, specialists and experts who calculate, adjust, connect, without having ever asked themselves for whom or for what; they keep busy with keeping things going, not giving a goal or end to this movement; neither science nor technique has values in themselves: they are "neutral" with regard to all values and all ends that one could, from the outside, attribute to them. This neutrality however is positive: reality is value, evaluated precisely as it is conceived as pure form (or as pure matter: in this context the two terms, usually opposites, converge) which is taken to all ends. Being assumes the ontological character of instrumentality: by its very structure it is susceptible to all usages and all modifications.

Are these notions inherent to science itself? Do not they correspond too easily to the conditions of experience of society in which the scientific method has been developed? To demonstrate the tie which exists between mathematical science and operational science on the one hand and rising capitalism on the other, hardly exhausts the question. It deserves to be examined again.

The existing tie between science and society is well known. When science was liberated ~~herself~~, it liberated nature from all "external" forces and constituted objectivity as means in itself, means pure and universal, an analogous liberation was produced in social relations: man found himself freed from all individual and "external" dependence; ~~[illegible]~~ an abstract and universal element entered the social process, measurable, from ~~the power of work~~. In the course of this process, the concrete aspect of faculties and individual needs (secondary qualities!) are reduced to a common denominator, measurable, objective basis of exchange, money, ~~[illegible]~~ universal means and medium.

The parallel between social development and scientific development reveals their common principle: efficiency. The scientific method sees in that its greatest guarantee of its justness. But it does not have, it does not know how to have efficiency per se! In the social process, the goal (of efficiency) is the production of goods for consumption, aiming at satisfaction, and exchange value is the universally measurable means integrating in this process subjects and objects. It seems however that science must owe nothing to these goals; that is the great illusion: by this very concept modern science tends toward an end. It has first of all made abstract the ends which appear to be incompatible, not with "reality", but with the ascendent industrial reality, and it in that has come to

means themselves: to technology. It has constructed a universe of intellectual and physical instrumentalities, a system truly "hypothetical." But a system of instrumentalities depends, as such, on another system : on a universe of ends. That which appears as exterior, as alien to the terminology of science, established itself to make part of its own structure, its method and its concepts: of its objectivity.

It is necessary then to reject the notion of the neutrality of technique, according to which technique is outside good and evil, is objectivity even, susceptible to be utilized socially in all its forms. Certainly, a machine, a technical instrument, can be considered as neutral, as pure matter. But the machine, the instrument never exists outside the whole, the technological totality; they exist only as an element of a "technicity" and technicity is a "state of the world," a mode of existence of man and of nature. Heidegger emphasized that the project of the world as instrumentality precedes (and must precede) technique as much as the totality of instruments. Man must conceive of reality as technicity before being able to act on it as a technician. However, this "transcendental" understanding has a material base, it is found in the needs and in the inability of society to satisfy them and to develop them. I want to insist that the abolition of anguish, the pacification of life and joy are part, essentially, of vital needs themselves. From its origin, the technical project contains the requirements of these needs: these requirements are in the notion of the harmony of worlds, physical laws, God as a mathematician (an extreme idea of universal equality through complete inequality!); they are in the notion even of modern science, which demands the free play of intellectual faculties facing repressive powers. If one takes account of the existential character of technicity, one can speak of a final technological cause and of the repressing of this final cause by the social development of technique.

The question is then posed whether neutrality in relation to all values is truly a scientific notion, that is to say an inherent requirement of the very structure of modern science. My opinion is that the neutrality of technique (which is only a manifestation of the neutrality of science) is a political concept, and that industrial society has clearly developed technique in a sense contrary to that which is really its own. Technicity, in effect, as a historical project, has an internal sense, the sense which is proper to it: it projects instrumentality only as means to relieve man of labor and anguish, to make peaceful the struggle for existence. There is the final cause of the methodical transformation of the world implied in technicity. For, technique, in developing itself actually as "pure" instrumentality has made abstract this final cause: it has ceased to be the end of technological development. In consequence, pure instrumentality, without finality, has become a universal means of domination.

Certainly, technicity requires domination: mastery over nature as a hostile, violent, destructive force; mastery over man in as

much as he is part of this nature; exploitation of natural resources for the satisfaction of needs. Industrial society exercises, and with good cause, this technological domination; but ~~in the measure~~ ~~which~~ society has made abstract of the final cause of technology, the technique itself has perpetuated misery, violence and destruction.

The interdependence of productive and destructive forces, which characterizes technicity as well as domination, tends to suppress every difference between a "normal" and an "abnormal" use of technology. The difference between the "technical" and "scientific" experiments of the Nazis and the defensive and democratic use of these experiments is tenuous. A missile is a missile, whether it destroys London or Moscow and von Braun is von Braun whether he works for the Brown House or the White House. The absence of finality in technique is manifested also in politics where it is also suspect and also debatable.

If the transformation of reality in a technician world has not abolished the domination of man by man, it is because technicity, in developing ~~itself~~ as it has done, has continued to make of life a means to live: and that is much more profound and much older than technique itself. Up till our time, technical progress ~~remained progress of alienated labor~~, of repressive productivity. Technicity has become the most efficient method, the most fruitful method for submitting man to his instrument of labor.

Though technicity, it is again the primitive repression of man by man which secures society: happiness is sacrificed to the "reality principal." This repression must be exercised in an even more efficient and more intensive way since it is never more menaced by technical progress itself. It ~~[redacted]~~ seems, in fact, that the achievements of industrial civilization make repression less and less necessary, and, confronted with the real possibility of the abolition of labor, repression seems more and more irrational. I wish to insist here on the immense political importance of the work of Freud, as an analysis of the fatal dialectic of progress.

The subjugation of man to work is the very process of civilization. In this process, the human organism ceases to be an instrument of satisfaction to become an instrument of work and of renunciation: satisfaction is put off, happiness is sacrificed. The primary instincts of man tend only to immediate satiation and to rest, to tranquillity in this satiation; they oppose themselves thus to the necessity of work, of toil, which are indispensable conditions of satisfaction in a world where scarcity of goods rules. Society must then turn [redacted] the impulses aside from their immediate ends and submit them to the "reality principal" which is the very same principle of repression.

Man then becomes an instrument of labor, he is productive. But this productivity is accompanied always by suffering and destruction which are the marks of violence done to man in his biological constitution. The progress of civilization rests on this essential modification of the "nature" of man. Henceforth individuals make

repression their place and their own business (super-ego, feelings of guilt, etc.) Their instincts themselves become repressive: they are the biological and mental base which underlies and upholds political and social repression; and in the measure that the social reorganization of the instincts represses spontaneity, eroticism, it makes the instincts of destruction and death more powerful. Transformed, in turn, into aggressiveness more or less controlled and useful, these instincts become an inherent force to the progress of civilization. Thus, the process of civilization is a double dialectical process which intervenes as much in the realm of political economy as in the biological and mental realms, one sustaining and fortifying the other. All progress, all increase in productivity is accompanied by progressive repression and productive destruction. The social division of labor engenders this fatal dialectic by which, to say thus, all progress of reason involves its own irrationality, each gain in freedom involves a new form of servitude, and each production involves an equally effective restriction. Thus, this dialectic becomes explosive in an evolved industrial civilization. To the extent that society masters nature and increases the material and intellectual resources which man can use, the double repression becomes less necessary as a condition of progress. The achievements of technique and the productivity of labor could reduce considerably the margin which exists between needs and satisfaction. A truly peaceful world could be born, where life would not be merely a means to living, but would be life in and for itself. Repression continues always and must continue, because without it there would be no more alienated labor, and without alienated labor, there would be no more growth of the repressive productivity which has become the motive force of society.

It remains to me, finally, to suggest some conclusions whose speculative character I do not hide.

I have admitted that the repressive tendencies, in an evolved industrial society, result from the development of technology as a political scheme, a scheme for domination. This domination, implied by technology, is double:
--Mastery of Nature: rational exploitation of natural resources, etc;
--Mastery of Man: rational exploitation of productive labor.

According to its inner logic, the technological scheme must achieve itself in doing away with itself: the necessity for domination must disappear. The victory over scarcity of goods and over misery must permit "the abolition of labor", putting production at the service of consumption and abandoning the struggle for existence to the benefit of the contents of this existence. Considerable forces are set up against such a future of technicity: through all progress and all amelioration of conditions of life is perpetuated domination and destruction. Even more: it is domination and destruction which are made the conditions of progress. I have underlined that the social organization of instincts plays a fundamental role in this process: that man which

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perpetuates is his own domination. All social repression rests on a "biological" repression. Consequently, all liberation presupposes a revolution, an overturning of the order of instincts and needs: a new principle of reality. This total transfer of values will affect the being of nature as well as of man.

Man and Nature remain always the two terms of a dialectical relation, factors of a dialectic totality. Social organization influences nature as well as man. There is no liberation, no peaceful human existence possible without liberation and pacification of nature. There is a mastery of man which is repressive and a mastery of man which is liberative. There is a mastery of nature which is a deliverance of nature from its own misery, which suppresses violence and natural destruction. Civilization has achieved such a mastery of nature in its gardens, its parks and its "protected reservations"; outside of these limited portions of the earth, it has treated nature as it has treated man: as an instrument of repressive productivity. "This conquering agression possesses the character of a rape of nature." (Gilbert Simondon, Of the mode of existence of technical objects; Paris, Aubier Editions, 1958, p. 127) This phrase is too often taken as a simple figure of speech, an old image of romanticism and utopia; in truth, it expresses the essential relation which exists between the destruction of man and the destruction of nature. Man is master and slave, subject and object of domination, [redacted] though the exercise of the domination is transfered to machines and directed against nature. "The machine is only a means; the end is the conquest of nature, the domestication of natural forces to means of a first enslavement: the machine is a slave who serves to make other slaves. A similar inspiration can be encountered with a request of freedom for man. But it is difficult to be liberated by transferring slavery to other beings, men, animals, or machines; to rule over a people of machines would enslave the whole world, it is again to rule, and all rule supposes the acceptance of schemes of slavery." (Ibid.)

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