On the Mode of Existence of Technical Objects

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Chapter Two

The regulative function of culture in the relation between man and the world of technical objects. Current problems

I. – The different modalities of the notion of progress

The encyclopedists' attitude toward technics can be considered an enthusiasm roused by the discovery of the technicity of the elements. Machines are not, in fact, directly considered automata by the encyclopedists; rather, they are considered an assemblage of elementary devices. Diderot's collaborators directed their attention essentially to the organs of machines. In the eighteenth century, the technical ensemble was still at the scale of the cork cutter's workshop or that of the scale maker's; this ensemble links up with technical elements through the intermediary of the craftsman who uses tools or machine-tools, rather than through the intermediary of veritable technical individuals. The division of subjects for study is consequently made according to rubrics of utilization and not according to schemas of technics, i.e., according to types of machines; the principle in grouping and analyzing technical beings is the denomination of the trade, rather than that of the machine. Very different trades, however, can make use of identical or almost identical tools. This principle of grouping thus leads to a certain superfluity of the presentation of tools and instruments which, from one illustration to the next, can be closely related forms.

The principle of grouping according to technical ensembles comprised of an indefinite plurality of elements, however, is linked very closely to the idea of *continuous progress* such as it existed for the Encyclopedists. It is when technicity is

grasped at the level of elements that technical evolution can occur according to a continuous line. There is a correlation between a molecular mode of the existence of technicity and a continuous pace of the evolution of technical objects. Gears and screw threads were cut better in the eighteenth century than in the seventeenth century; from this comparison between the same elements made in the seventeenth and in the eighteenth century arose the idea of the continuity of progress as a forward march in what we have called the concretization of technical objects. The evolution of this element, which takes place within already constituted technical ensembles, does not provoke any upheaval: it improves the results of fabrication without brutality, and authorizes the craftsman to preserve habitual methods, while experiencing the feeling of facilitation at work; the habitual gestures, better served by more precise instruments, now yield better results. The optimism of the eighteenth century is to a large extent based on the elementary and continuous improvement of the conditions of technical work. Anxiety effectively arises from those transformations that provoke a break within the rhythms of everyday life, making the old habitual gestures useless. But the improvement of the tool's technicity plays a euphoric role. When man, while preserving the fruit of his training, exchanges an old tool for a new tool whose manipulation is the same, he has the feeling of having more precise, skillful, and rapid gestures; it is the entire corporeal
161 schema that expands against his limitations, that dilates and frees itself; the impression of awkwardness diminishes: the trained man feels more skillful with a better tool; he has greater self-confidence; for the tool is an extension of the organ, and is carried by the gesture.

The eighteenth century was the pivotal moment for the development of tools and instruments, if by *tool* one understands the technical object enabling one to prolong and arm the body in order to accomplish a gesture, and by *instrument* the technical object that enables one to prolong and adapt the body in order to achieve better perception; the instrument is a tool of perception. Some technical objects are both tools and instruments, but they can be called tools or instruments according to the predominance of their active function or of their perceptive function: a hammer is a tool, even though, through the receptors of kinaesthetic and vibratory tactile sensitivity, we can subtly perceive the instant when the nail starts to writhe or to split the wood and penetrate it too fast; the hammer must effectively act on the tip so as to drive it in, so that, according to the manner in which this operation of driving in the tip is executed, definite information is communicated to the senses of the one who holds the hammer in his hand; the hammer is thus first a tool, since it is as a result of its tool-function that it can serve as an instrument;

even when the hammer is used as a pure instrument, it is still, primarily, a tool: the mason recognizes the quality of a stone with his hammer, but for this to happen the hammer must first partially chip away at the stone. Conversely, a telescope or a microscope are instruments, in the same manner as a level or a sextant are: these objects serve to collect information without accomplishing any prior action on the world. And the eighteenth century is the age in which both tools and instruments were made with greater care, reaping the rewards of seventeenth century discoveries within static and dynamic mechanics, as well as those found in geometrical and physical optics. The undeniable progress of the sciences was translated into the 162
progress of technical elements. This accord between scientific investigation and technical consequences is a new reason for optimism that adds itself to the content of the notion of progress, through the spectacle of this synergy and this fecundity of the domains of human activity: the instruments, improved by the sciences, are at the service of scientific investigation.

The aspect of technical evolution changes, on the contrary, when the birth of complete technical individuals is encountered in the nineteenth century. As long as these individuals merely replace animals, the perturbation is not a frustration. The steam engine replaces the horse in hauling wagons; it drives the spinning mill: gestures are modified to a certain extent, but man is not replaced insofar as the machine simply provides a greater utilization of energy sources. The Encyclopedists were familiar with the windmill, which they magnified and represented as dominating the landscape from the height of its tall silent structure. Several extremely detailed illustrations are dedicated to new and improved water mills. Man's frustration starts with the machine that replaces man, with the automatic weaving loom, with the forging press, with the equipment of the new factories; what the worker destroys during a riot are the machines, because they are his rivals; the machine is no longer simply an engine but a bearer of tools; eighteenth century progress left the human being intact because the human individual remained a technical individual among his tools of which he was both the center and bearer. It is not necessarily through its size that the factory distinguishes itself from the craftsman's workshop, but through the change in relation between the technical object and the human being: the factory is a technical ensemble that is comprised of automatic machines, whose activity is parallel to that of human activity; the factory uses true technical individuals, whereas, in the workshop, it is man who lends his individuality to the accomplishment of technical actions. From then on the most 163
positive, most direct aspect, of the first notion of progress, is no longer experienced [*éprouvé*]. The progress of the eighteenth century is a progress experienced by an

individual through the force, speed, and precision of his gestures. The progress of the nineteenth century can no longer be experienced by the individual, because it is no longer centralized with the individual as the center of command and perception in the adapted action. The individual becomes the mere spectator of the results of the functioning of the machines, or the one who is responsible for the organization of technical ensembles putting the machines to work. This is why the notion of progress splits in two, becomes aggressive, ambivalent, and a source of anxiety; progress is at a remove from man and no longer makes sense for the individual, because the conditions of the individual's intuitive perception of progress no longer exist; this implicit judgment, which is very close to that of kinesthetic impressions and to the facilitation of a corporeal dynamism which formed the basis of the notion of progress in the eighteenth century, disappears, except within domains of activity in which the progress of the sciences and of technics provides, as in the eighteenth century, an extension and facilitation of individual conditions of action and observation (as is the case with medicine and surgery).

Progress is henceforth thought of as cosmic, at the level of its overall results. It is thought abstractly, intellectually, in a doctrinal manner. Progress is no longer thought by craftsmen, but by mathematicians, who conceive of progress as man taking possession of nature. Beginning with the Saint-Simonians, this idea of progress starts to support technocratism. An idea of progress that was conceived and desired substitutes itself for the impression of progress as something undergone [*éprouvé*]. The individual who thinks progress is not the same individual as the one who works, except in some rather rare cases, such as the case of the printer and lithographer, who have mostly remained craftsmen. Even in these cases, for those who think deeply about its nature, the advent of the machine is expressive of an aspiration for the transformation of social structures. One could say that work and
164 technicity were linked in the eighteenth century through the experience [*épreuve*] of elementary progress. Conversely, the twentieth century brings about the disjunction of the conditions for the intellection of progress and for the experience of the internal rhythms of work resulting from this same progress. Nineteenth century man does not experience progress as a worker: he experiences it as an engineer or a user. In fact, the *engineer*,[14] the man of the machine, becomes the organizer of the ensemble made up of workers and machines. Progress is grasped as a movement that manifests itself through its results, rather than as progress in itself understood as the ensemble of operations that constitute it, as the elements that actualize it, and as being valid for a large number of people that would be coextensive with humanity.

14. English in original. [TN]

Indeed the poets of the end of the first half of the nineteenth century keenly felt progress to be the general march of humanity, with its charge of risk and anxiety. Within this progress there is something of an immense collective adventure, of a voyage and even of a migration toward another world. This progress contains at once something triumphant and crepuscular. It is perhaps the word that Vigny sees written above the cities in *La Maison du berger* [The Shepherd's house]. The feeling of ambivalence toward the machine can be found in the evocation of the locomotive and the compass, the former in *La Maison du berger*, the latter in *La Bouteille à la mer* [The Bottle in the sea]. The latter poem shows how Vigny felt about the transient (and perhaps transitory because contradictory) nature of progress in the nineteenth century. This unfinished, incomplete idea of progress, contains a message for posterity; it cannot fulfill itself within itself. One of the aspects of *Les Destinées* [Destinies] is to accept living within this moment of technical evolution. Vigny made it accurate and significant by understanding that technical evolution could not satisfy itself by way of itself, that it couldn't simply close in on itself.

A third aspect of the notion of technical progress emerges with the repercussions of the internal regulation of technical individuals regarding technical ensembles, 165
and, through these, regarding humanity. The second stage, that which corresponds to the arrival of a new wave of technics at the level of individuals, was characterized by the ambivalence of progress, by dual situation of man with regard to the machine, and by the production of alienation. This alienation grasped by Marxism as having its root in the relation of the worker with the means of production, does not only derive, in our view, from a relation of property or non-property between worker and the instruments of work. Beneath this juridical and economic relation exists an even more profound relation, that of the continuity between the human individual and the technical individual, or of the discontinuity between these two beings. The reason why alienation arises is not solely because in the nineteenth century the human individual who works is no longer the owner of his means of production, whereas in the eighteenth century the craftsman was the owner of his instruments of production and of his tools. Alienation does indeed emerge the moment the worker is no longer the owner of his means of production, but it does not emerge solely because of this rupture in the link of property. It also emerges outside of all collective relation to the means of production, at the physiological and psychological level of the individual properly speaking. The alienation of man in relation to the machine does not only have a socio-economic sense; it also has a physio-psychological sense; the machine no longer prolongs the corporeal schema, neither for workers, nor for those who possess the machines. Bankers whose social

role has been exalted by mathematicians such as the Saint-Simonians and Auguste Comte are as alienated in their relation to the machine as the members of the proletariat. What we mean by this is that there is no need to presuppose a master-slave dialectic in order to account for the existence of alienation within the proprietor class. The relation of property with respect to the machine contains as much alien-
166 ation as the relation of non-property, even if it corresponds to a very different social state. On either side of the machine, above and below, the worker, who is a man of elements, and the industrial boss, who is a man of ensembles, both lack a true relation with the individualized technical object in the form of the machine. Labor and capital are two modes of being where one is as incomplete as the other with respect to the technical object and the technicity contained in industrial organization. Their apparent symmetry does not at all mean that the union of capital and of labor reduces alienation. The alienation of capital is not alienation with respect to labor, with respect to the contact with the world (as in the master/slave dialectic), but rather with respect to the technical object; the same goes for labor; what labor lacks is not what capital possesses, and what capital lacks is not what labor possesses. Labor possesses the intelligence of elements, capital possesses the intelligence of ensembles; but it is not by combining the intelligence of elements with the intelligence of ensembles that one can arrive at the intelligence of the *intermediary and non mixed* being that is the technical individual. Element, individual, and ensemble follow each other along a temporal line; the man of the element is late with respect to the individual; but the man of ensembles who has not understood the individual is in no way ahead of his time with respect to it; he tries to enclose the present technical individual in the structure of an ensemble belonging to the past. Labor and capital are both late with respect to the technical individual that is a depository of technicity. The technical individual is not of the same era as the labor that enacts it and the capital that frames it.

The dialogue between capital and labor is false because it is of the past. The collectivization of the means of production cannot achieve a reduction of alienation on its own; it can only achieve this reduction if it is the precondition for the acquisition of the intelligence of the individuated technical object by the
167 human individual. This relation between the human individual and the technical individual is the most difficult to form. It presupposes a technical culture, which introduces the capacity of different attitudes rather than that of work and of action (work corresponding to the intelligence of the elements and action to the intelligence of ensembles). What work and action have in common is the predominance of finality over causality; in both cases, the effort is directed at a certain result to

be obtained; the employment of means finds itself in the position of minority with respect to the result: the schema of action matters less than the result of the action. In the technical individual, however, this disequilibrium between causality and finality disappears; viewed from the outside the machine is *made in order to* obtain a certain result; but, the more the technical being becomes individualized, the more this external finality effaces itself for the benefit of the internal coherence of functioning; the functioning is finalized with respect to itself before being so in its relation with the external world. Such is the automatism of the machine, and such is its self-regulation: there is, at the level of regulations, a functioning, and not only a causality or finality; in self-regulated functioning, all causality has a sense of finality, and all finality a sense of causality.