

THE TIME OF REALITY AND THE TIME OF THE LOGOS

Logic is the science of pure time, just as geometry is the science of pure space.

In the past one would not have dared make such a statement. Just as geometry seemed to deal only with stable shapes and not with transformations and deformations, logic seemed to deal with the static modalities of thought and among its connections only with the syllogistic—and that as a matter of privilege. But geometry has become the science of moving spatial shapes; everywhere mathematics has brought in the fluxional element; on the whole, science considers rest as an extreme instance of motion. Logic too—even leaving aside mathematical logic—cannot keep its classical image. For thought cannot confine itself—and confines itself even less than mathematics does—to reflecting the static. While a circle can still be looked upon as a simple circle and not deformed by topological vision, a form of thought is always *condensed time*.

Translated by Nicolas Slater

The Time of Reality and the Time of the Logos

It was claimed in the past that a logical step had nothing to do with time. Today one would say that it juxtaposes to real time another time, but not that it concerns itself with the eternal. Even its detachment from *real* time is a matter of some doubt: Hegel and Marx have demonstrated their interdependence by dialectics. But if one confines oneself to formal logic itself, one could still say that it reflects, by its specific temporality, time and its properties, just as geometry reflects and constructs space and its properties.

Topology has done “as it listed” with spatiality. It has taken a circle, has rumbled it at its pleasure and—under certain conditions—has found that there was a “circle” in the new figure, in the property that it has of being a “simple closed curve” (having a single loop). The new science has thus found another form of spatiality. Could one not do the same thing with time? Or rather: has one not already done this? It is true that time seems to be a “measure” *par excellence*; but just as the spatial forms have become detached from their rigidity, time itself can be taken out of its rhythm. In its own way, time can be compressed, extended, deformed, “rumbled;” it can thus lose what seemed to characterize it, its measure, while still continuing to be “time,” or else a form of temporality. And the question remains, just as in the case of space. Despite its deformations, which are the characteristics it must have to maintain itself as time? The nature of temporality could acquire some new characteristics; its structure would then become more evident; and above all, having a changed image, time will prove to be present precisely where things seemed to be characterized by its absence: in logical forms, on the one hand, and on the other hand, in that creation of the modern world, the machine.

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Before attempting a description of simultaneously deforming and modelling time, which we will call “time of the logos,” we can perhaps give some common examples of certain of its deformations.

From a question to its answer, there elapses a time, however brief; likewise from a problem to its solution. It is not a question of psychological time, but—as has been said—of “the time of

the problem.” This cannot be suppressed: an electronic machine could shorten the calculation in an amazing fashion, but it has only shortened it. Each operation requires time, operational time, just as time is needed for the establishment of any foundation.

This seems natural, because there is no question as yet of a striking deformation of time. Hence it might be objected that the creation of an interval for each operation or sequence stands to reason and that we are free to call this interval—nay, this *distensio*, as Saint Augustine said, by the name of “time.” But where is the time of a “concept,” for example? To this one might answer that the concept itself would be an example of this other form of temporality, just like the identity of concepts and their contradiction, or that of judgments.

But let us continue to dwell on general examples, this time laying stress on the deformations brought about by the “time of the logos.” An expression of surprising exactitude has been used of the prophets: they “remember the future.” In the “time of the logos” in which every prophet lives, a necessary logical sequence has already taken place; what must happen appears so evident to him that it seems to him like something that has already happened, allowing him to draw conclusions from something that does not exist as though it were an antecedent. In the perspective of the time of the logos, the future is transformed into the past.

While this is the case with prophecy, sometimes the time of the logos intervenes in the opposite sense, so that the past appears as the future. It thus happens in our conscious experience, that we first find the answer and then the question; and there are questions which can hardly be propounded before the answer is given. The formulation of the question, with all that lies behind it and with its uncertain gaze upon the future, only comes about when real time has already answered the question.

What we call “experience of life” consists, in large measure, of such inverted processes. One understands and one learns, without necessarily harvesting more profits in real time. But when one has made one’s way into it, the time of the logos sends one back, towards things whose significance and even whose reality were not apparent when they occurred. It does this by forcing one to link up significant elements in an inverted fashion and in this way to put the past into the future.

The Time of Reality and the Time of the Logos

A last general example: wisdom. To be wise could mean: to make of the future a form of the past. This time, one does not perceive the future like the prophet; one does not necessarily perceive the past like the sagacious man, but one knows something essential about their relationship. For the character of the wise man is, perhaps, to be able to "recognize" things which he has never known. Anything that could happen to him, he knows already. The time of the logos has become for him so objective that, in real time, there will no longer be "anything new under the sun" for him.

We can now return to philosophy, to find there the most characteristic example of perturbations brought about by the "time of the logos." It is the one offered to us by the philosophic vision of Kant: it is the *a priori*. In the concept of *a priori*, which after all represents Kant's most original contribution, the history of philosophy shows in a striking fashion what happens at the moment when the "time of the logos" and real time interfere. *A priori* means "before;" but on this occasion it appears afterwards. In a certain sense, it existed before experience. All knowledge begins *with* experience, even though its source may not always be *in* experience—such is the famous formula which opens the *Critique of Pure Reason*. The forms of sensation—time and space—and the categories of understanding—unity, causality, etc.—cannot be conceived before experience: they barely appear at the latter's call. And yet they are, according to Kant, the precondition of experience—they are *a priori*. Hence the complications of this *a priori*, which one is tempted to seek before experience and which, in reality, one transforms into a new experience, preceding habitual experience. This is precisely what some commentators have done, in evoking atavistic experience as a foundation for present experience, phylogenic experience as preceding ontogenic experience, or some determinism, psychological or otherwise, as a source of logical necessity. But the *a priori* thus ceases to be what it claimed to be: it just becomes a banal *a posteriori*, produced by an experience of a more general order which is only operative, with the appearances of an *a priori*, in the consciousness of the individual.

The import of Kant's thesis, however, seems to us to be categorical: the *a priori* renders experience possible; hence it precedes each experience—and not only the individual and

historical experience—in the time of the logos; yet the *a priori* is born at the call of experience, in the “consciousness in general;” for every conscious mind it happens after experience, even for an individual’s conscious mind, *in real time*. Therefore one is in the habit of saying that *a priori* means only “independently” of experience; which is true, but skirts the problem of the two times.

There are indeed two times. Let us investigate the nature of the second one.

THE TIME OF THE LOGOS AND ITS NATURE

The appearance of the time of the logos as a simple modality of psychological time can be dispensed with from the start. Even if some of the preceding examples leave the impression that the question under discussion concerns the intimate experience of man, and nothing else, the time of the logos remains a specific time; Kant’s *a priori* was not of a psychological order, and neither was the “time of the problem.”

The appearance of logical time, a specific one when it is related to psychological time, as a purely subjective human creation, also vanishes. The simple fact that today one poses the problem of *contact* with other rational beings of the cosmos implies that the latter too could duplicate their real time by a time of the logos, communication proving impossible without this. The time of the logos has *at least* the objectivity of intersubjectivity.

Finally, the appearance of the time of the logos does not go beyond the contingent intersubjectivity, since it is only of a rational order and not related to reality. It is destroyed by the science of logic itself. For logic is not a *free* product like mathematics. Even if one only takes one of them into consideration, one must admit that there are three logical orders: the order of expression, that of thought and that of reality. Along with mathematical logic the science of logic deals with expression and its pure form in thought; it deals with thought and its pure form in classical logic; and it deals with reality and its pure form—in what might be called comprehensive logic, but which, all things considered, is philosophy itself. For it is precisely to bear witness to a logical order, nay to necessary connections,

The Time of Reality and the Time of the Logos

that reality can be known. Hence logic can abstract from every predetermined connection, but cannot elude the problem of consequence. But the last logical chain of consequence, the most closely and at the same time the most loosely worked out—is time itself.

Does this provide a definition of time? Man has given names to certain things, and then he has asked himself what the meaning of these names can be. He has called a great thing God and he has then asked himself, through the centuries, what God was. He has called an aspect of reality “time” and he has since continually asked himself what time is. Or, to use the expression of St. Augustine once again: man knows what time is, if one does not question him about it, but if questioned he knows nothing about it. Even today one could not define time in an unequivocal manner. But modern man has reversed the problem of the investigation: we no longer begin by defining things, to use them later in terms of their definition, but we make models of them, we quite simply remake them, and it is only later that we try to define them.

The tendency to model things and processes, which is apparent on the technical plane, could also take place on the speculative plane. Just as man does not know what time is, he has in fact had no knowledge about what space is. But mathematics has *constructed* other spaces, that is, it has given new models (non-Euclidean spaces—in particular Riemannian-topological space), and to our surprise we found not only that we thus approached a definition both wider and more rigorous (space of colours, of sounds), but also that certain new forms of spatiality could be found in reality, thus proving that they were “objective.” The image of space detached from reality has been transformed, and it has ended by being applied to reality itself. One should perhaps do the same thing and in an explicit fashion with the idea and image of time. We are finally on the point of penetrating into other times and perhaps of encountering the times of others. It is thus very pertinent to establish a new model of time.

But the time of the logos has already done this implicitly. Starting from real time, it has transformed it, has modelled from it another time, and finally has superimposed this other time upon real time. Let us follow the stages of the construction.

Had it been necessary, in spite of all, to define real time at

the outset, then—to the surprise of us modern men—the definition of Aristotle could still serve as a point of departure (which proves that we do not know much better than the ancients what time is). In his *Physics* (219b et seq), Aristotle says “time is the number of movement.” And he adds: “to be in time means to be measured, for things are enclosed by their number as they are by their location.” But since the movement of displacement in a circle is best fitted to the category of “number,” as being homogeneous and incessantly repeated (the movement of the stars), it is this type of movement which will give—as everyone knows—the unit of measurement of time.

All seems clear, as far as habitual time is concerned. But the time of the logos comes to change the picture. Time can be “number,” but *it is not necessarily measurement*. The ancient definition says too much, if by number one means measurement. But if number means order, then the definition would make sense; one could still use it to determine a certain form of time. It is not the uniform measure of movement, but rather its ordering that is involved, with another temporality; not at all the sort of time that strikes the hours, but the sort that advances. In space, the number that the definition of time implies could be the ordinal and not the cardinal. But this changes everything.

At the rather elementary level at which we place ourselves, one could say that the ordinal has triumphed over the cardinal as soon as the scientific spirit has become riper. In any case the rigidity of the cardinal number does not seem to derive from the essence of numeration. It would be for the ordinal number to do this, after all, since it suggests continuity. The cardinal indicates things, the ordinal indicates developments; the one concerns itself with what has happened, the other with what is happening. It is thus the latter that has to represent the “number of the movement” that time would be.

The *first* deformation of real time, of the perspective brought into play by the time of the logos, is a deformation in the proper sense of the word: it is the elimination from time of the rigid rhythm of measurement and of uniformity, which is made fluid. In place of continuous discontinuities (days, periods or “now’s”), the time of the logos provides pure continuity. The very thing that seemed essential to time, the measure, is not essential at all. However, order always characterizes it, even if it tolerates

The Time of Reality and the Time of the Logos

various "times." Indeed, Leibniz defined time in this way as a simple "order of succession," as opposed to space which is only coexistence. Consequently the Aristotelian definition would seem to be saved, at least in its literal sense. Nevertheless Aristotle would be passed by, even in his literal sense. When one defines time as "order of succession," it is no longer possible to lay stress on the word "order," i.e. on the recollection of the number, but on the succession. After all, order is only too telling on the subject of time, if the former has as its domain of definition the breadth of the ordinal number. Rather than by the order of succession, time could be characterized by the *fact* of succession. At all events, the time of the logos can keep succession alone as its own.

A *second* deformation of real time by the time of the logos has just appeared: time is not order of succession, but succession that barely creates an order. One could, therefore, no longer say that ordinality is the nature of time. It is the result of time, its work or its trace. Time would represent pure succession. At least, one can perfectly well conceive it in this light, as detached from the number-measure, detached from numerable order, and even from the uniqueness of succession. Here, then, is another model of time, that of successions in the plural, a ramified time, indeed a sort of temporal space for processes, operations, developments and creations. The time of the logos has abandoned the naivety of the image of time considered as a unitary procession of things as a whole, or as "a present that advances." For there is no more unity of time, seeing that there is no measure, hence no more "totality" nor "uniqueness" of time. The successions can be free.

Nevertheless the successions must *hold*, precisely in order to be taken out of the unique time where they were bound, at least externally. In order to be constituted as successions, they needed a link, and this link is internal. But in this way, the simple succession which also seemed to characterize the essence of time, would not constitute its definition. The model must be further defined: there is here the question of a *bound* succession—and on this occasion time will have found its character. Thus it is rather for the connection than the succession to account for itself.

A *third* and last deformation of time has thus appeared, and

it leads to the model of time that we will call, properly speaking, the time of the logos. It represents the reduction of time to a sequence. The time of reality is constantly disconnected from the present, being in a sense pure disconnection (Hegel used to say: pure negativity, incessant suppression of self). This is why the time of reality appeared as an interminable collapse which made Aristotle say that time was rather destructive than generative. But it is the contrary with the time of the logos; it connects incessantly. And just as succession was the source of order, and not the reverse, the connection which is established on this occasion (not the one already established) will be the principle and the source of succession. By the very connection, time seems to have a direction and a meaning, like a vector. In relation to real time, which was only a "scalar" (it counts, but does not orientate), the time of the logos has the nature of a vector; but beyond all measurement, only possessing direction and meaning.

The time of reality could now itself appear as an extreme case of concatenation, just as Euclidean space is an extreme case. Purely by virtue of its sequence, the time of the logos is nevertheless richer, more varied and—to use Hegel's expression—more powerful. For Hegel discovers a very strange aspect of the time of reality: it is both the most powerful thing in the world and the weakest. We would say: the power of real time is the manifestation of the sequence (all is linked in time), and its weakness is the loosening of all sequence (everything unbinds in time).

Consequently, the new model of time, the time of the logos, reflects something of real time, but changes its nature. To sum up, in its new version the nature of time would appear to be of this kind:

(1) Time is not number as a measurement, but number as an order.

(2) It is not simply order either, that is order of succession, but it is succession.

(3) Strictly speaking, it is not a simple succession, but a connection in act.

After stating exactly what is the nature of such time, we will attempt to describe its structure. It will then remain for us to show that this model of time has in fact become superimposed on reality (by means of a machine, as we shall see) and further-

The Time of Reality and the Time of the Logos

more that it has always been at work in the logical consciousness of man, and, for over a century, at work in his history.

THE TIME OF THE LOGOS AND ITS STRUCTURE

Considered on its own, apart from its connection with the time of reality, the time of the logos, thus defined, presents the following characteristics:

- (1) it has only two dimensions, the past and the future, the present being non-existent;
- (2) it can be compressed and extended;
- (3) it has direction, without being irreversible like habitual time;
- (4) in contrast to real time, it can be brought back or begun anew.

The first characteristic, the absence of the present, might seem to be the most unexpected. The time of the logos was defined as a connection in act. Besides the time of reality, in which things are or become, there exists a time of "how a certain thing is possible." Thus it is the necessary time taken by an operation or creation (in things or by means of thought), of an explanation, an implication, an integration or a deduction, in a word, the time of a chain reaction; and it is also in its most extended meaning, the time of the revealing of identity or of the development of a contradiction. It gives the pure content of logical forms of thought. Thus if logic is endowed with temporality, it would seem natural to find in it all the dimensions of time. But the present is missing.

The past and the future are clearly in evidence here. Aristotle defined time more exactly as "number of movement according to the *anterior* and the *posterior*." Even if the expression were faulty (for a time which demands definition is already implied in "anterior" and "posterior,") it is nevertheless significant that when characterising time the ancient philosopher did not at first speak of the present. There does indeed exist a "primum" and a "deinde" for the time of the logos, but between them there is nothing. What comes first, basis or principle, possesses in fact the character of a past; as such it will vanish; what follows, the chain of reasoning, is the future, or, for completed consecutions, the future spent. The present is nowhere to be found in

the time of the logos, which is the time of the necessary opening of the past towards the future, of the antecedence towards the consequence, and nothing else. At the most the present can be a combination of past and future; but in that case there would be no question of an authentic present which is transition. Thus through the present's being totally missing, the logical forms have seemed to be divorced from all temporality—to such an extent was one accustomed to see in the present the true mark of time.

And indeed, within real time, the present is decisive. If one considers it as “order of succession” time becomes a succession of presents, notwithstanding the constant displacing of the “now,” its position and its function mark it out as the true kernel of real time, to which it gives stability. In this way time is usually centred on the present, and it is the present which provides an equilibrium for its simplicity. For, inasmuch as in time there is no totalisation possible, it being infinite, so the past does not increase at the expense of the future, it does not seem to absorb the substance of the future, but as the volume of the past increases, so that of the future increases also, the present remaining an unaltered centre which has before it just as much as it leaves behind.

But quite different is the picture of the time of the logos. There equilibrium is no more to be found. Lacking a present, it is out of centre. While real time envelops all things in a universal, regularly advancing procession, the time of the logos is hasty and propulsive. That is why, when thought encounters the time of the logos (in the field of knowledge) under the guise of a necessary opening, that is to say of an antecedence, it can find no rest. Just as one cannot stop in the middle of an unfinished train of reasoning (“every spring the swallows come; this is the spring...”), so thought is incapable of stopping at the brink of the void created by new time. Real time is continually filling the world with new but corruptible contents; the time of the logos is continually emptying the world, by moving out towards what is to come. It is the rôle of the future and not of the present to be the principal dimension of the time of the logos and that is why it is a vector of it.

With its *second characteristic*, that of being able to be freely compressed and expanded, the time of the logos loses not only

The Time of Reality and the Time of the Logos

its centre but also its proper measurements. Habitual time had an exact measurement, as we have pointed out: in a last analysis, that of the cosmic rhythm inherent in every corner of the universe. It is with this measurement that all other forms of time are connected, however varied they may appear: organic time (time of growth and of life), in man also psychological time and historic time. But the time of the logos has no inner or outer dimension capable of adopting any tempo whatsoever. Considered in its capacity of slowing or slackening, this time can confirm the impression that logical forms are engulfed in the eternal. However it is not the slackening, but rather the tension which gives its specific character to the time of the logos; and this is why its novelty, for those who can grasp it, is the contraction of "times."

Man has always been aware that to think, for example, means to shorten. The act of thinking is indeed the act of unifying a diversity and the better one thinks the more one unifies. What are the limits? Beyond all limits would seem to be the ideal of thought: until one reaches direct vision. Philosophic thought itself throughout history considered that it could throw light on the human mind by referring it back to "intellectual intuition," which with its direct vision, could be said to represent an ideal of knowledge. In cases where the human mind has been denied intellectual intuition, thinkers have continually invoked such an intuition for mind of a superior order, angelic or divine. Even thinkers of scientific formation, such as Descartes and Kant, did so, the latter openly invoking an *intellectus archetypus*. But it will always remain for Kant to fix the turning point; for while admitting that the human intellect is limited, the thinker ends by making these very limits (we would call them of time, of the progression which must be called in question) man's supreme title. It is precisely because we do not know the world directly that we possess a science and a scientific vocation; it is precisely because we do not do good spontaneously, as angelic natures do, that we possess a moral conscience.

Hegel goes further. He says that one can conceive of no other form of Mind than the mediate mind, revealed in the time of the logos ("God is syllogism"). In demonstrating by his dialectic that the nature of Truth is to be mediate, Hegel brings to an end intellectual intuition and the desire for ecstasy.

He it is who finally opens up the path through speculation to a new time, that of the logos. However, having immersed the rational in reality, Hegel wraps them both so closely together that he seems no longer able to separate them, nor detect the contractions of time; as has been rightly said, he entirely misses the revolutionary character of the logos. And nowhere in his vast logical machine does he have the *presentiment of the machine* which was about to burst on the world. But it was precisely by means of its capacity for contraction that the time of the logos was about to increase reality twofold with the machines which now people the earth.

The *third characteristic* of the time of the logos emphasizes its inflexibility. It can be limited and extended as much as one likes without losing its rigour. And this time it is a total inflexibility unsullied by irrationality or irreversibility. The time of reality was irreversible (only nowadays, one can speak of a certain reversibility with regard to particles). In contrast, the time of the logos can move backwards. Or else, if it also is irreversible in a certain sense, it is not in succession, but *as* succession. In its case, the reply can precede the question, the analysis is duplicated by synthesis, just as, on the material level, fission is duplicated by fusion and explosion by possible implosion, the progressive taking place just as inevitably. For its part contemporary scientific thought is dominated by the idea, strange at first glance, that the simple does not precede the complex, but that, on the contrary, the complex must be postulated before the simple. It must be accepted that, in nature, the heliocoidal movement appeared first and rectilinear movement only later, as a particular case of the former; similarly in the time of the logos in which thought has its place, one must accept the fact that non-Euclidean geometries preceded those of Euclid. The world does not merely regulate itself; better still, by means of logical movement, it re-regulates itself.

But in this way logical order transcribes order, and it does so according to strict rules. Notwithstanding their irreversibility, the sequences suggested by reality are only states of fact, in which necessity is slow in making its appearance, one might say posthumous. On the other hand, with the time of the logos necessity is an evolving progression. Thus in relation to the time

The Time of Reality and the Time of the Logos

of the logos, which is total inflexibility, the time of reality is laxity itself.

And yet the *fourth characteristic* of the time of the logos, that of being able to begin anew, endows it with a flexibility which is foreign to real time. For in spite of its slow, slack course, there is discernible in the latter an element of the implacable: its essence allows of no recommencement. Once accomplished its development cannot be challenged, and its advance has not only a single line of direction but also unicity. On the other hand the time of the logos is not arrested at the point of "once." One can return to the different stages it has accomplished and by this means reconstruct the order which one has not achieved at a first attempt. Thus if real time can be symbolized by the straight line (what Hegel calls: the wrong infinite), the other can be conveyed by movement which circles back on itself.

In the hands of man the time of the logos turns back on the time of reality and, when it cannot transform it as it wishes, stimulates its course by means of practical thought, by transforming its content and duplicating it with isotopes. By repeatedly returning to reality, on which it confers a different tempo, the time of the logos might seem to cause disintegration, just as its creations might appear artificial. And yet it is in this time that things are accomplished, while the time of reality is that of corruption. The former combats entropie; the time of reality increases it. In the final analysis the time of the logos is disclosed as being just as paradoxical as the other time, but in an opposite sense: it is revolutionary, but constructive, while the other is conservative but destructive.

So now we can see it more clearly: the time of the logos is—like space in geometry—a model of man. But if it is found in reality, or if it can act upon reality, or indeed even become incorporated in it, it no longer belongs to man alone.

TIME OF THE LOGOS AND THE MACHINE

We do not know what time is, but we *make* it, and then our lack of knowledge is at an end. Man has incorporated into reality a form of time for which he had constituted the model; he has objectivized the time of the logos, with its pure connectivity in

the form of self-moving creations, machines, whose nature is perfectly temporal, if time is the "number of movement in relation to the anterior and the posterior." But on this occasion we are no longer dealing with Aristotle's time, nor with that of nature, or of God. We are dealing with the time of the logos, which has freed itself from the cardinal number, the ordinal and from all free succession, to become connectivity in act. This is the time, with its four characteristics, which we find in the machine.

First of all, the machine *has no present*. It is a presence without a present. We can attribute its own present to the machine, when we consider it either in repose or in activity, but in itself the machine is foreign to the present in all forms. Not because it is dead: stone is also dead—and yet it possesses a present, or at least it figures in the present of real time. The machine, on the other hand, withdraws from real time and takes refuge in the time of the logos. It is not true that everything which is not in time is in eternity. The machine is in *another* time.

Because it is not in the present, the machine has no temporal centre. It *all works* at the same time, rejecting the distribution of its progressions into pasts and futures *across* the frontiers of any present whatsoever. Nevertheless, without a separation taking place at any point, the necessary connections of the machine always possess a form of past and future, but closed, in a circle, as was movement in the time of the logos. For there are in fact anterior progressions and others which follow them because they have been set in motion by them, in spite of the fact that all chains of action take place "in the same time," from the point of view of real time. The temporal dimension which dominates, with the machine, is the future, as is the case with all time of the logos; for the machine is pro-pulsivity *par excellence*. It sends things forwards. So what does the machine do? With it, in contrast to living organisms which are always "doing" something in the present, the matter in question is what it is about to do, not what it has done. The machine exists in its own result.

Secondly, just like the time of the logos, the machine can *extend or compress* its working time. In principle it has no fixed measurement, and does not take into account an external dimension (as for example natural rhythm). And yet it is unable completely to suppress its "time". Like Hegel's Mind, it is only time by

The Time of Reality and the Time of the Logos

mediation; or one could also say: its truth is development. One could hardly imagine a machine whose working was instant. But one can indeed imagine a machine whose time (as in the time of the electronic machine, or of accelerators of particles, or even of historical revolutions) would no longer be subjected to the all-leveilling tyranny of real time.

Thirdly, the machine possesses inflexibility by the double orientation of its work in one direction or in another. For one can hardly imagine a machine which would work backwards, reversing with just as much accuracy the forward progression it had already made. Like the new time of the logos which it incorporates, and, from another point of view, like the irreversible cosmic accident which is life (even if the subtlety of the machine is not comparable to that of life) the machine, by its order, opposes the disorder of the world. For dead matter, at least, it represents a principle of order *such* that it can bend to its own interests the most rebellious powers of nature and can even create others still more rebellious.

By means of the machine man has stolen from the gods the mastery over movement, just as long ago he stole from them the mastery over fire. It is probably, in the history of the earth, a new event of the same order. Or perhaps we have here an even greater exploit, for fire has no rigidity, it only consumes, whereas movement possesses the rigidity of its progression, whether it be open or closed. And it is on the sure orbits of closed movement, not in the flames of Heraclitus' fire, that things trace their message—things such as the elements and the substances of the world and also the "machine beings" already in existence or which will exist one day.

Finally, with the time of the logos, the machine is never in the power of the *irrevocable and the unrepeatable* which constitute the precariousness of reality. If for time and for times there is no return, the time of the logos, on the other hand, and its own times are by their very nature *revocable*. Furthermore in this connection the machine possesses something of the nature of man, who sprang from natural spontaneity and claims to be—as Goethe says—a creature capable of renewing his being. The machine has made the striking innovation of being able to do the same thing over and over, in a world where everything (and, in most

cases, man also) is flowing and changing, to such an extent that, as Heraclitus says, one cannot bathe twice in the same river. The machine recaptures time itself, and enables one to plunge not only twice but innumerable times in the same current. Nothing can recall the time of Heraclitus, in the case of the machine. And yet the machine is time incorporate.

Or else some vestige of real time does remain; and this is a most significant aspect. If Hegel said, and rightly, that time is the most powerful and the weakest thing that exists, then—in its own way—the machine is power itself and weakness too (“a jumble of metal”). Everything depends, as with time, on connectivity in action. The machine seems to have concentrated within itself the essential principle of temporality, connectivity, and it is of this connectivity, first and foremost, more so even than of empty succession, that the machine is composed.

That is why, by reason of the connectivity which the machine incorporates exclusively, one might make up fantastic stories about machines in general, as if they were not yet in existence. In the philosophical perspective—which always follows things but which nevertheless places itself before them—a classification of machines yet to be invented should be allied to possible types of connection. But the logical experience of thought through the ages has thrown light on *five* modalities of connection: that based on identity, on causality, on functional relation, on system and, finally, on contradiction. Their reasoned presentation figures, or should figure, in every work on logic. But their *materialisation* is perhaps to be found here in the apparent jungle of machines, which made their appearance on the surface of the earth a century and a half ago, and which, like a new, more gifted species, call in question all other terrestrial species. Thus one could imagine the following classification of machines: there would be machines based on *identity*, by the simple repetition of their progression; others based on *causality* (perhaps the motor with four speeds, that dying divinity of our world); a third type based on *functional dependence*; another on *systematic centralization*; and the last type—perhaps the machine of tomorrow—based on *contradiction*, that is to say stemming from anti-energy or anti-matter.

Confronted by such a picture of real or possible machines it can be said that at best no machine has ever been invented by

The Time of Reality and the Time of the Logos

means of such empty plans. But no philosophical thought worthy of the name has ever failed to amuse the scientist.

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The time of the logos is a reality with man, and, in the machine, it is objectivated reality. It is supported by real time, in which it has found its starting point; it can be confirmed by the meeting of man with that-which-is-not-man; and it must have a doctrine—as we shall show—in the science of logic.

For the moment man is making use of it, as if it were a model of time which had been made operational. From the intimate alliance of man with such a time; an alliance which will probably lead to man's being implanted in machinity—just as there were dreams in antiquity of man implanted in animality, the sphinx or the centaur—something new has sprung into being in history. There has appeared a time which takes a stand against time. The man of today can still momentarily believe that he has to choose between one and the other, between the time of reality and the time of the logos. But if he knows himself in his capacity as man, he realizes that he has already chosen the time of the logos.