

Time reconsidered.

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If one considers the results of informatics, all those calculators and processors, plotters, computers, and all the other ultra-rapid idiots, one tends to believe that it will be their velocity which will characterize our future experience of time. We shall be able to get rid more quickly of our chores, and thus dispose of more free time. I confess however that it is not velocity, and consequent time economy, which inspires hope and fear in me. All previous machinery, to begin with the lever and to end with the air plane, have done the same thing. The information revolution will, I believe, have much more profound effects on our time experience.

Informatics simulates thought processes in apparatus. In this it has recourse to a more or less Cartesian conception of thought. To think is taken to mean to compute clear and distinct elements, (for instance concepts or numbers). Those elements are taken to be symbols which mean points of the extended world. If one could attach to each such point in the world one of those elements, thought would become omniscient. Unfortunately this is impossible, because the structure of clear and distinct thought is inadequate for the structure of the extended thing. In the extended thing the points are compact, while in the "thinking thing" they are separated by intervals. Through those intervals most of the points of the extended thing will escape. Of course; one can integrate those intervals by appropriate calculus, but those integrals will themselves be clear and distinct elements. This is why Descartes, in his period, hoped for Divine assistance in his effort to adequate thought to the extended thing. As for the computers, they do not share this faith, and therefore attempt a different method. They turn the vectors of signification which link thought to extended things. They do this by projecting universes where each point means a specific point inscribed in their program. In such types of universes thought is indeed omniscient. Now such an inversion of the vectors of signification, through which the symbol no longer signifies, but is signified, is the mark of informatized society. But this causes those projected universes, within which informatized society will have to live, to be full of intervals like sieves.

Informatized society will inhabit point-like universes. Bit-like, atomic, quantic universes. Universes composed of infinitely small stones, calculable universes. Mosaic universes. As we inhabit process-like, linear, historical universes, and as pre-historical man inhabited scene-like, plane, image-like universes. Informatized society will have to live in zero dimension, as we live unidimensionally, and pre-historical man lived bidimensionally. To each such way of life there corresponds a time model. Before trying to sketch those three time models, a few words concerning the function of models in general are in order.

Man is an abstracting creature. He is able to withdraw from the world, and to withdraw specific aspects from the world. He may do so step by step. For instance: images are surfaces that have been withdrawn from volumes, they are abstract surfaces. Texts are lines withdrawn from surfaces, they are abstract lines. And the points of computations are elements which have been withdrawn from texts, they are

abstract points. With each of those steps man has stepped back from the concrete world, in order to see it better and to be able to grasp it better. The purpose of abstraction is to come back into concreteness. The models are tools meant to serve this come-back. They are like dragnets or traps for the re-insertion of concreteness into abstraction. Thus time models are meant to re-introduce time as concretely experienced into the image, the text and the computation abstractions. Unfortunately however concreteness does not permit to be trapped. It requires that it be lived through. With concreteness it is as with virginity: once lost it is lost for good. This is why the models replace and stand for concrete experience. The pre-historical time model stands for concrete time, as if it were lived through. Add the same goes for the historical and post-historical time models. I shall now attempt to sketch those three models, because all of them are active within our experiences, our knowledge, our values, and our acts.

Images are meaningful surfaces which are scanned by our eyes to discover their meaning. In an effort to have them point toward concreteness. By doing so, our eyes travel in circles, and they return over and over to pictorial elements which they have seen before. They return more often to those elements considered to be the most meaningful ones. Thus our eyes establish reversible time relations between the pictorial elements, and those relations are charged with meaning. Now this system of relations which is thus established by our eyes is then projected out from the image and into the world to serve as a time model. The world will thus become and context of images, of scenes.

Time circulates in such a world, and it orders all things in a meaningful manner. If a thing should leave its place, it will be put back in its place by time. Eternal return. Time judges things, each in its just place within the scene. Which is to say that the world is full of meaning. Man inhabits this fullness. In living, he collides by any of his actions with this close-packed web of relations, he displaces things and creates disorder. He transgresses. Time will judge him, his transgressions will be punished, he will be put in his place. He cannot escape his fate. But he can propitiate it by sacrificing to the things he is displacing. He can pay his due toll in advance. This is the time model of myth and magic.

It has modelled the concrete time experience of society for millenia, it continues to do so for many societies even now, and for ourselves on many occasions. But, about three thousand years ago, it began to be questioned in the eastern corner of the Mediterranean basin. Because then and there a new step into abstraction was being taken, the one away from the image toward the line, and linear writing was invented. Now the time model of myth and magic is inadequate for texts, because with them the eyes do not scan, but they follow the line to discover its meaning at the end of the line. In this the eyes follow the rules of writing, the syntax. They thus establish a specific relation between the text elements, which they then project out from the text into the world. The world will become a context of texts.

Time in such a world is a river which flows from the past toward the future, and it carries all things away. The present is but a transition point between past and future. The things are not really there: they become, and they point at the

future. Nothing ever repeats itself: every night that follows a day is a new and unique night. Each instant lost is an irrevocably lost opportunity. Each single action is irrevocable. Everything is in flux, in process, an event, a happening, be it in progress or in ~~XXXXXXXXXX~~ decay. And everything is ordered by the inescapable chain of cause and effect. But man is capable of knowing that causal chain and of submitting it to his own designs, inspite of its complexity and intricacy. And this is his freedom: knowledge of necessity. This is the time model of history, of political commitment, of science and of technology.

This model has been repeatedly reshaped, to begin with the Pre-socratics and the prophets, passing through Christianity, mechanistic thought, Darwinism and Marxism, and finally has taken the form of the Second principle of thermo-dynamics. But its linear structure has remained the same, and we experience time through that model whenever we are "historically conscient". Nonetheless, the model has become unsustainable since about a century ago, because the threads that order events, that inscribe the phenomena into processes, are beginning to fall apart. Cause and effect begin to become reversible within the nucleus of the things, and one begins to suspect that the causal chain is not somewhere out there "behind the things", but rather has been projected out there by linear human thought. One begins to suspect that science discovers its proper mathematico-logical structure "behind the things". Even more: the historical time model falls apart through the simple phenomenological observation that time does not arrive coming from the past, but coming from the future, and that the model inverts its flow. The true reason for the decadence of the historical time model, however, is that people begin to take a further step into abstraction, away from the line and toward the point, away from texts and toward calculus. Now for such a new universe of bits, of quanta, which thus is coming about, the historical time model is inadequate. This new step toward abstraction has produces, among other things, computation and informatics.

The fundamental structure of such an empty universe of whirling atoms is chance, (the Democritian "clinamen"). The atoms are not yet real, but only virtual, and where they coincide by chance, there they become real. Such a universe has the structure of a virtual field wherein real things come about according to its various accidental shapes as probable constellations. This is why two disciplines are appropriate for an attempt at an orientation in such a world: topology, (to understand the shapes of the field), and probability calculus, (to understand the formation of the phenomena). Now this orientation method, this method of deciphering the bit-universe, is being projected out from this universe and into the world to serve as a time model.

The present is what is real, because it is there that all the virtualities materialize, (present themselves). And the present is where I am: I am always present. I am that black hole wherein all the virtualities flow to become real. The virtualities approach me: they are my future. In whatever direction I look, I see my future. My future is not chaotic, as if the virtualities which surround me were haphazardly strewn without any order or limit. On the contrary: the virtualities accumulate in my vicinity, and become rarer farther afield, and the closer they

are, the more they become probable. And they appear, all of them, against the empty horizon of my death, beyond which there is no time, because there is no present. Those virtualities which fall into me, which present themselves, are "realized by me". And they constitute my memory. Now this knot of realized virtualities, this memory which is I, keeps growing as I go on living, and I am in part aware of it, (conscious memory), and in part unaware of it, (repressed memory) Thus this time model distinguishes between two forms of the past.

But what really marks this time model are two of its aspects: The virtualities do not present themselves to me by chance alone, but I can make them appear deliberately up to a certain measure. They are "futable". The black hole which I am is not entirely passive. It is a vortex which can suck in virtualities. Which is to say that I am capable of rendering probable what is improbable, that, I can create information. The second characteristic aspect of the model is that it shows that I am not alone in the world. This I discover when "futing". By doing so I do not come against futable virtualities only, but also against other black holes like myself, black holes which suck me in. Those are presents which are excentric with relation to my own present, they are centers of a future different from my own. Therefore I cannot "future" them, but only recognize myself in them, and recognize them. With such a recognition of a future different from mine my own future expands, but it may collapse brutally with the death of the other present. All this is very mysterious, possibly because the time model here sketched is so novel.

Now, precisely because this model is so recent, one can see where it stems from: cosmology, nuclear physics, genetics, psychology, cybernetics, informatics. One can see phenomenologically that it is a model which has been projected from an abstract universe of atoms. Nonetheless it has the power to be experienced in the place of concrete time experience. Still: the model poses problems for "historical consciousness", it has numerous disturbing aspects. For instance:

The self is conceived therein not as an identity, but as a vacuity. It does not permit the distinction between time and space, because "virtuality" and "proximity" are spacio-temporal categories. It does not permit to distinguish between progress and decadence, because the future lies in every direction. It no longer permits explanations of the present by the past, because is the product of the future, and thus comes "after" the present. But what is most disturbing in the model is the point-like structure of time it proposes. Now this being an aspect linked to our overall subject, "informatics", I shall now look into it.

The future is composed of distinct virtualities. It does not flow into me like a stream, but rather like sand. For instance under the form of distinct sensations. And when I anticipate my future, when I "futuraize", I do not seize a compact mass of virtualities, but specific distinct virtualities, for instance those disposed along the branches of a tree of decisions. Thus the future, and time in general, appears perforated by intervals through which I can glance my death. Those intervals are not parts of time, they are neither long nor short, they cannot be measured, they are nothing. The term "tedious" articulates the experience with the intervals.

I believe that it is in this context that we must reconsider the velocity of informatic apparatus, and of informatized society in general. An effort is made to have the sand grains of time follow one upon the other with ever greater rapidity, in order to diminish the intervals between them. Informatized society will have to live under the bombardment of informations, of sensations, of pieces of knowledge, of experience, which aims at having it forget tedium. The informatized man of the future will participate, anticipate, play and produce art, with the aim to forget tedium. But such a commitment to the increase of the velocity of the time sequence is absurd, because the intervals between the time points cannot be integrated. On the contrary: the more informations multiply, the more their point-like, tedious aspect becomes apparent. The more rapidly the chores of everyday life are accomplished, the more apparent becomes their vacuity, their tediousness. And the more I anticipate my future, the more I render it hollow. I suggest to you that it is under the sign of tedium that time will be experienced by the informatized society of the future.

But consider: the experience of tedium is the experience of the void, of death. It is thus possible that informatics, and many other aspects of the technological revolution we are witnessing, will help us to open ourselves up toward the void, toward death, precisely because all this progress is so dull. Now if we open ourselves up toward death, it is toward the other person we become open. And this is my hope which I would like to share with you.