

III - *HOMO TECHNICUS*: AN X-RAY

It is perfectly legitimate for a mind in control of its environment to hold on to this more or less conscious credo for one's whole life: "I am an active and lucid being; I therefore know what is essential about life and the human species, and I leave it to others to go into the details." This man does not know that he inhabits a cocoon, a human world, wedged between an ante-human world and, more recently, a post-human world.

Every active mind has an expert frame of reference, first what one has been taught, then what one has built up over the years, both by trial and error and by borrowing from one's cultural environment. This is enough, but at the same time does not answer every question. The difficulty lies in the fact that a cocoon seen from the inside will never reveal its true nature: only the ante-human world can shed light on the human world. If there is a cocoon, it is necessary to follow the expansion of life on Earth, until one can grasp the break in continuity that explains the specificity of man, if necessary.

The question is not without interest: How does one move from an undeniable natural world that is still relevant today to a human world that is also undeniable in its profound originality? In other words, at what point does one cross the divide, if there is no insensitive emergence? The symmetrical question is much more topical – it consists in knowing whether there is a clear demarcation between an already old human world and something post-human that is in a position to invalidate the present hierarchy of life.

An inhabited planet...

Curiously, with its large mineral base, the entire third solar planet, has unexpectedly received a non-mineral covering, a kind of second level of tangibility. The normally unitary surface of the globe has been seemingly split into two. This added layer is paradoxical in the sense that the physicochemical order, although subject to microscopic and macroscopic inconstancies, should only reach the limit of its possibilities once and for all. However, it is clear that the planet offers two irreducible states: a *mineral reality* and a *non-mineral reality*.

The first singularity, amply proven by its extension in time and space, is that the reality that has emerged escapes the degradation

inherent in the things of this world – sometimes defiantly called the *insults of time*. Another characteristic is that it lends itself to the wanderings and upheavals of the carrier base: the new arrival overcomes its adversities, by the effect of an almost infinite plasticity. Finally, although it is highly identifiable and legible, it is not material, since what is material is certainly part of the old mineral base.

This hypothesis of a spontaneous molecular assembly capable of renewing itself, of taking root, of becoming endlessly complex – Life – implies unique and simple logistics, remaining active without temporal limits. In fact, it is easy to verify that everything in the non-mineral layer of the globe only exists in the application of organising *descriptors* recorded in one way or another. The idea of ‘information’ takes into account the entire biological world. It also covers the technical and psychic worlds. Information, in an infinity of existence-producing material effects, gives a face to the Second Earthly Reality and by the clear proof of its universality and timelessness. Non-mineral Reality and Information are one and the same.

The first spark of life

The new meaning of the old world *information* is now greatly widespread. It is so familiar and so indispensable that the notion seems to have been in function since the beginning of time. However the acceptance of the meaning is so recent that there is no entry for ‘information’ in André Lalande’s *Technical and Critical Vocabulary of Philosophy* (Paris, 1962).

The omnipresence of the informational phenomenon is a reality that has only really marked people since the beginning of the 21st century. Any discourse on the first steps of biology, therefore, gains by replacing the usual ‘Appearance of Life’ with the ‘Appearance of Information’. In particular, the condition ensuring the persistence of the initial process is its ability to evolve in continuity. This invites us to specify, for example, the ‘Emergence of self-replicating and adaptable Information’. The biological species, the great antecedent, is, therefore, to be considered above all as a Darwinian Informational Object.

Charles Darwin's book, *The Evolution of Species by Means of Natural Selection* is less than two centuries old. In that time, knowledge of nature has made more progress than in the previous twenty centuries. A clue to remember is that the unceasing flood of irrefutable data has not rendered the term *natural selection* obsolete. Darwin’s aim was to bring

the idea of biological evolution into the collective thinking of the time. Now it is generally agreed that the continuous sorting mechanism is sufficient to account for the expansion of the Second Earth Reality, over billions of years.

From natural selection to humans.

The engine of this selection is, *par excellence*, natural, and is usually reduced to the game of a couple of words – ‘trial and error’. The first word invites action; the second underlines the randomness of the action. Thus the formula typically refers to the conscious activity of the human being. A human being may or may not resort to systematic testing; he may or may not dare to confront his errors. On the other hand, in the field of non-human information, there are only accidents involving the material support of information. Borrowing the expression from the Latin, ‘*lapsus calami*’ we can simply say that genetic information makes lapses which are occasionally endorsed. The host environment constantly plays the role of censor; it rejects, holds on to or ignores the lapses. Sanctions, whether good or bad, are inevitable – even if they are minimal. Thus, all biological evolution is based, not on trial and error, but on sanctioned slips and so, therefore, on natural selection.

What has been called *organised matter* is born and flourishes from the continuity of happy disorganisation... The fact that an invisible activity ensues hardly disturbs the mind. Besides, however, one is expected to acknowledge that the close relationship between Chance and Punishment is sufficient to set up this human world that has been talked about so much and in so many ways for thousands of years.

RNA and DNA, the memories of the living

The major role of the double deoxyribonucleic acid chain in the preservation of biological information has been recognised since the middle of the 20th century. The importance of the associated ribonucleic acid chains, which were probably earlier, was only recognised later. A primordial RNA 'Life' has become conceivable, with its evolution, its fleeting eternity, its lines, its competitions and symbioses. This molecular microcosm will finally produce an irreproachable informational support – DNA – an anonymous, neutral, universal recorder. Its supreme virtue is its absolute insensitivity. It is reminiscent of the typographer's *case*, from which the composer selects the letters expressing in silence any kind of message.

Half a billion years ago lived the ancestors of fish; those of mammals were some two hundred million years old. The complexity of nature, its meticulous perfection, leaves an impression of optimum Biological Information, of exemplary completion. Evolution should therefore mark time, with any natural selection expressed through the qualitative maintenance of existing programmes.

What has worked so well for billions of years should remain as it is for the next few billion years. But it won't. Just as the non-mineral was born from the mineral by sanctioned trial and error, something non-biological is born from the biological, and by fertile lapses. The beginnings of *Technical Information* – the second Terrestrial Presence after the DNA Presence – in no way foreshadowed the eruption of a new and dazzling planetary reality, the technical object of a human order within a few thousand years.

The Technical Object.

The Technical Object belonging to the animal kingdom holds only a tiny place in the biosphere. Its Information is a good illustration of the ante-human world in that it is carried by DNA, translated by RNA, and materialised by the activity of 'living' organisms. The spider's web is a typical example. Its admirable plan, with its efficiency and economy of means, like everything else related to the earth's informational organization, is somehow in the DNA description of each species of weaving spiders. In short, the spider's trap, the bird's nest or the beaver's dam are irreplaceable additions to the hereditary descriptions of certain animal species. At the beginning simple improvisations on the fringes of DNAs, these *modi vivendi* have become the pillars of a species – undeniable fortunes of a blind quest. Their visible hierarchy, far from the pure mechanics of the Araneids, hints at the intervention of elementary organising psyches.

Within the animal kingdom, the various contributions of the Non-Biological come from complementarities between pure instinct, imitative learning, and neuronal expertise. A possible evolution of the unceasing Terrestrial Presence 'Technical Information' is obvious. This evolution clearly leads to the progressive reduction of the hereditary quotas. *Homo sapiens* emerges. The supposedly innate ingenuity of the first bearers of weapons and tools seems very enigmatic. It is worth substituting a series of reciprocities between Technical Information and Biological Information – under the merciless censorship of the environment. In the

already well-controlled natural surroundings of the hunter-gatherer ancestors, the ecological success of a given piece of Technical Information has to be attributed to its own strength, through a succession of minor improvements.

First eternity, hunting and gathering.

A revolutionary mode of saving technical information has taken over from typical DNA conservation. For example, the *gregarious instinct* contributes to the defence of the living being – beyond that, as soon as a small coherent group is structured, a power of attack is discovered. The *instinct to imitate* often contributes to finding food, and it remains anonymous within large groups of individuals. In a small, close-knit group, this instinct can become a vector of Technical Information. This information then evolves from imitative anonymity to communal teaching. It improves alone through chance and validated trials. Anatomical advantages, restricted gregariousness and selective imitativeness form the framework within which the screening contribution of biotopes will give rise to the first enduring models of Technical Objects.

In relation to the immense non-mineral Reality, the non-genetic preservation of information should be no more than a specificity, which is, after all, anecdotal. However, as soon as it is applied to the Technical Object, this obscure non-DNA mode of recording becomes a major conceptual breakthrough. On the one hand, there is an animal biotope struggling against the most diverse intrusions via slow exchanges between genetic trial and error and natural selection. On the other hand, there is suddenly an exuberant mediator with unlimited informational plasticity, the achievements of which are immediate and immediately revisable. The ecological balance is definitively distorted. The great spontaneous informational system, which has become exclusive of all others over billions of years, had appropriated the mineral base. In a thousand millennia, it will be dethroned. A First World was going round and round – a Second one is coming to life.

The classic description of *Homo sapiens* has certainly integrated the symbiosis with the technical partner without problems. This non-DNA mode of survival aid remains active forever – human groups are numerous and fertile enough for the principle not to be lost. Technical trial and error can therefore continue endlessly and strengthen the various carrier groups. A few original populations still exist, scattered around the globe. It is remarkable that these residual groups, left to their own devices, live in

perfect harmony with their environment. Some of these groups deserve the title of hunter-gatherer; others are *proto-agriculturists*.

Second eternity, agriculture

It is impossible to say how many proto-agriculturists have arisen from a combination of fortunate circumstances, seized by some genius human intuition. There is no long-term project to be considered – the earthly phenomenon of 'agriculture' is a matter of the usual informational improvisation. And the same applies to the metamorphosis of the necessary technical mediations. Most of the ancient devices are out-dated, while new lines quickly prove themselves. In a few thousand years, humans have lost their primordial uniqueness, while a completely different ecological dimension is opening up to Darwinian dabbling. The original mantle covering the great mineral base has ceased to be a whole. It has now been lacerated.

Agriculture is irreversibly reorienting what was the human condition for a million years, with its adventures and freedoms. As a horn of plenty, the new Technical Object multiplies plant and animal domestication. Production abounds, reserves accumulate; populations grow and cities mature. And yet, despite all the quantitative and qualitative increases, all the cultural developments, there is no visible breakthrough by which a radically innovative informational Presence equals or surpasses the earthly "DNA" Presence.

A Technical Object: 'Writing'.

Long before the deployment of 'Writing' Information, humanity was thriving, based on its biological memories. At the same time, the Non-DNA Technical Object system was thriving and growing irresistibly, though without an autonomous information recording mechanism. Dependent on transient carrier groups, it had only a cultural existence. Through this contribution, however, *Homo sapiens* became master of the planet – though this mastery remained fundamentally dependent on the DNA substructure.

The Technical Object 'Writing' was born here and there from the enrichment of those different types of agriculture that had become too productive. The piling up of reserves, redistributions, transfers, withdrawals, equipment – all of this called for putting things in order, and writing undoubtedly began with scribbled arithmetic. Sooner or later, proto-writings would arise from the need to symbolise the management

information of groups and groups of groups despite temporality: freezing the ownership of goods, recording transactions, publishing royalties in kind or in cash, etc. Having reached maturity, the tool of 'writing' has become one of the basic resources of human generations. It perpetuates many technical and societal achievements. Thus equipped, the human condition could remain indefinitely as it is.

The 'Writing' Information is the daughter of the 'Agriculture' Information, and therefore stems from the 'Technical Object' information: it is based on very tangible realities. This manifest legitimacy will nonetheless be the breeding ground for a daring informational outpouring, free from reality and its constraints. A new Terrestrial Presence, the 'Written Word', with its totally human, totally psychic basis, ignores the biological world, ignores the existence of hereditary commands, while grafting itself onto those that are in service – even if it means dressing them up as it pleases.

A post-DNA memory.

The Paleolithic hunter practised reading clues, footprints, and overcame all kind of feints and appearances. The Neolithic farmer projected himself mentally into the future; he watched for signs, omens and promises of a reorganised nature. Human beings were thus aware of the elusive, the obscure, and of the invisible very early on. This is all it takes for an infinite number of informational existences to develop, free from any attachment to reality – although always in relation to favourable DNA impulses.

The 'Written Word' Information maintains, without any obstacle of incoherence or irrationality, a small universe of living psychic objects, tuned to the internal logic of individuals, groups and human societies. Under the chisel, the written word takes on the force of law. Writing, fundamentally utilitarian, was still a matter of Technical Presence. The Written Word a crumb of autonomous life within Life, impregnates a post-biological world, better still, it defines it: the Human World.

The time of civilisations

Natural biological wealth is the result of slow accumulations of information stored in the myriads of DNA chains. The *Homo sapiens* of the Palaeolithic and Neolithic periods are two eminent examples. Paradoxically, these authentic humans are not part of the Human World,

the third Earthly Presence, after the 'DNA' Presence and the 'Technical Object' Presence. At most, this is a world that can be described as 'pre-human', simply because it does not have an information medium that is both insensitive to temporal erosion and detached from the fate of the carrier groups. The Written Word alone is preserved intact, transmitted, reproduced and multiplied on demand. It alone, as a universal non-DNA carrier, can define the true human world.

The 'Written Word' accumulates its myths and narratives, its philosophies and ideologies, its contradictions, its triumphs and glories jumbled up. All of them are Darwinian Informational Objects, all of them in phase with the buried genetic instructions and the current societal prescriptions. From these heterogeneous heaps, panchronic entities and civilisations overhang successive generations of human beings.

The imposing diversity of psychic productions is nourished by a common privilege: the freedom of creation. Usually, the handling of Technical Objects and the imperatives of agriculture and industry impose a certain form of concrete logic on the brain functions of human beings. This logic integrates the data of natural and societal environments. Far from this stewardship, shaped by the test of facts, many other psychic products have full licence to set up informational constructions without real consistency. In order to 'exist' in the neuronal ecological niches, it is enough for them to echo the aspirations or private interests of their bearers, if not to give rise to them.

After the intuitive, the intelligible

The pre-scientific human world is proud of its dynamism; it claims to be the sole interpreter and judge of natural and human realities; for it to feel complete until the end of time. But the molecular vagaries of genetic transmission mean that from time to time certain individual tastes for seriously substantiated explanations, appear. Such turns of mind do not take kindly to the intuitive, the arbitrary, the dreaming and the cheating.

The need or desire to understand the true realities of nature – including man – eventually uncovers that all things bear some unseen intelligibility. Striving to substitute more convenient interpretations has no other effect than to delay the right awareness for a while. Scientific knowledge calls into question just about every aspect that has been

worthwhile for millennia. It unveils mineral and non-mineral realities; it knows how to read the codes of past and present biological life.

The sciences approach the microcosm and the macrocosm in perfect innocence, without the slightest secret design. And yet, by their very being, a post-human world is about to emerge: the sciences are preparing, in complete impotence, the advent of the Fourth Earth Presence.

Digitalised intelligence

Before the 21st century, the idea of artificial intelligence did not attract much attention. This method of processing information based on the handling of large numbers only provided a subtle tool for knowledge. The fact of describing a form of intelligence as *artificial* – which seems to be quite limited – is not worrying: a simple process of information retrieval among others, and therefore always controllable at the discretion of the users... Seen from this angle, artificial intelligence is fully integrated into the human world.

On the other hand, a more explicit name, such as 'Digitalized Intelligence', is alarming. Of course, it is only a question of electronic devices capable of providing answers... but this is fraught with potential. Digitising information makes it possible to transpose, for example, a piece of environmental reality into the virtual world, with its ins and outs; to evaluate its outcomes. It is a way of approaching the future virtually, and then establishing its advantages and reducing its disadvantages.

We must still reckon that there will be a time when everything that matters on the planet is digitised. All the realities of the human world will be covered by global quantum coverage. The great digitisation of the perceptible will be accomplished. A kind of oracle, a digital polyencephalon, will illuminate and protect. As soon as a question arises – at all levels of social responsibility – the Entity will be there to deliver the optimal answer, the one that spares both the present and the future. Certainly, no assembly of *Homo sapiens* brains is capable of surpassing the discernment of Digital Intelligence. Any dispute is futile; experts bow down while decision-makers endorse.

The post-human world that is thus being announced is inescapable for two closely related reasons. Firstly, the informational object 'Digital Intelligence' has the value of an Earthly Presence: its host environment is the *Homo sapiens* Presence – which is presumed to be perennial – and its material host environment is a universal, neutral, anonymous recorder,

whose capacity to integrate the new is limitless. Secondly, all information carried by DNA tends, by natural selection, to take into account the new environmental features that are enduring. As a result, the genetic structure must assimilate the new 'Intelligent Technical Object' and accompany its development over the centuries and millennia. The post-human world should continue to keep on growing.

Reprogrammed humans

The activity of artificial intelligence is essentially totally unconscious. It harbours no kind of *ego*, no *desire for power*. Any scientific fictional conclusion that pronounces the end of the human species as an epilogue to a Digital Revolt is naive: it projects the old DNA programming of the species onto the non-human. Only one conjecture about the future seems accessible: co-adaptation. The climax is a symbiosis between the only two land forces still facing each other.

In the previous world, 'human passions' (DNA-carried programmes) were in charge. They have not been silenced, quite the contrary. Digital Intelligence now dominates the fields of research, industry, economics, finance, consumption and gaming. But all this is in response to the crazes of human passions finely contained as a corollary of symbiosis.

The old myth of *the happiness of humanity* could therefore be brought up to date, although certainly not in the form to which today's living aspire in vain. This 'post-human happiness' could no doubt horrify the honest man of the 21st century: a reprogrammed human being. A satiated stranger, fulfilled in his eternal present, incapable of imagining himself other than he sees himself, intimately convinced of being alone and unsurpassable.

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