DREAMS AND NIGHTMARES
BEYOND THE ANTHROPOCENE ERA

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I

Υρις: this Greek word refers at once to crime, excess and madness. Υρις, however, is not just a name for madness: it also describes the fundamental situation involved in different forms of madness — and there are many kinds. The contemporary situation of disruption is characteristic of our hubristic situation today. Υρις is also what makes us inherently hybrid beings, a hybridity that also characterizes the realities that surround us and constitute us: they are always double, duplicitous, uncertain and ambiguous realities, if not completely illusory. And this is so because these realities are chimeras, artefacts that are mixtures of heterogeneous realities, like the chimeras of Greek mythology, and for this reason they are pharmaka — that is, on the one hand, remedies for what, in the fundamental situation of Υρις, are all the forms of harm, suffering and misery, and, on the other hand, poisons that always end up aggravating those harms, sufferings and miseries.

This situation of fundamental hybridity results from what Leroi-Gourhan calls the process of exteriorization, which I prefer to call, after the analyses of Alfred Lotka, the process of exosomatization. The exosomatization process is the continuation of the organogenesis characteristic of the evolution of life, both as ontogenesis and as phylogenesis. Disruption — which is a specific case of our fundamentally hybrid situation in that it constitutes a new stage of exosomatization, one in which transhumanist delirium can arise — engenders a generalized madness that is differentiated into regimes of ordinary madness, extraordinary madness and reflective madness — and here
I refer simultaneously to the analyses of Michaël Foessel, Jean-Baptiste Fressoz and Peter Sloterdijk.

In *In the World Interior of Capital*, Sloterdijk describes the opening of modernity as a kind of propensity to madness, a ‘willingness to embrace delusion.’¹ And in *L’apocalypse joyeuse*, Fressoz shows how the emergence of the Anthropocene depended on a vast increase in risk-taking, that is, an intensification and in some way a permanent excitation of ὑϐρίς. Foessel shows that power as such always contains madness, both for the powerful and for those who submit to them. This analysis can be found in an issue of the journal *Esprit* entitled *Aux bords de la folie* [*At the Edges of Madness*], which shows that an increase in psychic and moral illness in French society is reflected in various psychopathologies that are more or less related to those forms of madness described as ‘ordinary madness’.

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In *History of Madness*, Foucault tried to show that Western society, from the seventeenth century, radically opposes reason and unreason, that is, madness. In the Greek philosophical tradition, however, and until Montaigne and even Pascal, madness, folly, irreducibly belongs to thinking: it is constitutive of the faculty of thinking. And not just madness and folly, but also stupidity and idiocy are dimensions of noesis qua faculty of thinking intellectually and spiritually.

I say intellectually and spiritually because νοῦς cannot be reduced to λόγος. Νόησις is νοῦς in actuality, and as such it is spiritual, while, as thinking, it is also logical, that is, ‘intellective.’ But my belief is that νόησις can never be fully described by the logical and intellective faculty. And this is why νοῦς is translated into Latin both as *intellectus* and as
spiritus – through which the French words ‘intellect’ and ‘spirit’ come into being.

I insist on this because these two dimensions will in Kant become the understanding, Verstand, and reason, Vernunft, as these are distinguished within the faculty of knowing, which they constitute through the whole that they form, and as the faculty of thinking, as νοησις.

* It is necessary to think and to know, that is, to make νοῦς pass into actuality as νοησις, only because the noetic beings that we are are hybrids, that is, perpetually immersed in uncertainty. And this is so because our noetic productions, which are concretized through works that are also artefacts, constantly modify exosomatization through the addition of new organs that disrupt established ways of life. Such ways of life were themselves ways of appropriating and containing the ὦρις that exosomatization conceals insofar as it always harbours chimeras – and disillusions, harms and sometimes immense catastrophes.

What makes madness, stupidity and idiocy possible is ὦρις, and it is also excess and crime: ὦρις is itself an outcome of exo-somatization. But madness, stupidity and idiocy, insofar as they stem from ὦρις, are also what force us to think, what creates thinking – and does so, as we will see later, by starting from dreaming. Madness is sometimes the source of the brilliance [génial] of thinking, its genius, in the original sense of the word: génial meant original, singular, without precedent. This is what Plato says in Symposium, what Aristotle says in Book 30 of Problems, Seneca in ‘On the Tranquillity of the Mind’ and Montaigne in the Essays, along with many seventeenth-century moralists and contemporaries of Descartes.
But in many cases, *noesis* is also the negative exercise of this faculty. The faculty of thinking often produces *bad* thoughts, mediocre thoughts, negative thoughts, that is, regressive thoughts, *stupidities* – which are often also malicious. Moreover, stupidity belongs to thinking to the extent that all thinking can become stupidity, such as that of epigones, but also to the extent that all thinking, however stupid it may be, can end up concretizing itself in the real world as ‘stupidities’, that is, *stupid acts*, inscribed into the real as an aspect of exosomatization, however minor the case may be, perhaps just an expression in words or advertising.

But thinking in general – including moments of genius that lead to significant steps in exosomatization – is, to the extent that it is irreducibly hybrid and necessarily pharmacological, inevitably bound to become toxic or regressive, until it eventually turns into an expression of stupidity, and no longer of genius.²

It is notable that all these questions concern expression, that is, ex-teriorization, which is to say, that which is made possible by exo-somatization. In the Platonic dialogue bearing his name, Protagoras describes exo-somatization while discussing the meaning of democracy with Socrates. He there recounts the myth of Prometheus and Epimetheus – a tale that I have myself taken up in detail, forming the basis of *Technics and Time, 1: The Fault of Epimetheus*. Protagoras asserts that we, mortals – *oi thanatoi* – are the fruits of a *forgetting by Epimetheus* compensated for by Prometheus, who had to steal fire from the Olympians that enabled us to be endowed with those artificial qualities that are technics.

Technics, however, whose general symbol is fire, produces *pharmaka*, that is, artificial organs, *which can always turn against those who use them*. Since they never come with technical ‘instructions’ [*mode d'emploi*]
provided, and since such instructions could never be a mere ‘user manual,’ these artificial organs require the conception of therapies and therapeutics. These therapies are forms of knowledge that, each time, in each epoch, must be developed in a singular way, that is, idiotically, in accordance, on the one hand, with the new forms of pharmaka that emerge in that epoch, and, on the other hand, with what forms that epoch’s heritage: the geographical area, the historical heritage, the individuality that seizes hold of it, both as psychic individuality and collective individuality—constituting what Heidegger calls Da-sein.

The therapeia required by the pharmakon is always a form of knowledge. This knowledge can be life knowledge [savoir-vivre], work knowledge [savoir-faire] or noetic knowledge – spiritual, contemplative, theoretical, intellective, academic, scientific. The myth as narrated by Protagoras tells us that such knowledge must always itself be contained in and by what has been transmitted to mortals by Hermes, on behalf of Zeus: their relationship to shame, αἰδώς, and to justice, δική. Shame and justice are feelings that ὑβρίς must inspire, but that must make it possible to contain ὑβρίς, ‘contain’ having here a double sense: they must restrain ὑβρίς, that is, prevent it from being unleashed, which contains it in the sense that they are constituted by it.

Αἰδώς as shame: I believe that this is what the Greeks share with Japanese civilization — a primordial knowledge constitutive of the tragic culture that, with monotheism, Europeans and Westerners have lost, Plato preparing the way for this coming of Christian monotheism that Paul of Tarsus will constitute by hybridizing Greek and Platonic culture with the Judaism of the one God. Protagoras and Socrates are the last witnesses of the tragic Greek epoch.

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To think about the mad, idiotic and stupid dimensions of νόησις, we must reinscribe them into the process of exo-somatization that Protagoras describes in mythological terms, but which today, and for more than a century, has been described by palaeontology, archaeology, zoology and anthropology, as well as by the economics of Georgescu-Roegen, or, in France, René Passet. The history of life is itself an evolutionary process resulting in endosomatic organogenesis. Within this history, exo-somatization is a new stage of organogenesis, characteristic of what Georges Canguilhem calls technical life, where the production of new organs continues outside the body – hence exo-somatically.

This new form of life, no longer purely zoological, is thus based on artificial organogenesis – an organogenesis that is not organic but organological. Exosomatic organogenesis engenders organs that, as artificial, are always both negentropic, as any living organ must be (I will come back to this point concerning the relationship between life and entropy in a moment), and entropic, that is, destructive of life. In other words, they are pharmaka: these negentropic remedies are always also entropic poisons.

Like monotheism, Western philosophy has spent the past twenty-five centuries denying and repressing this fundamental dimension of noetic life – technical life being also noetic life. Noesis – as faculty of thinking, of reasoning, and in this sense of anticipating – has a negentropic function. Here, I take up the standpoint of Alfred North Whitehead: the function of reason is to produce negentropic bifurcations in the struggle of technical life against entropy in general and against its own anthropy in particular – here, we must spell entropy with an ‘a’ and an ‘h’: anthropy.

These dimensions must all be understood starting from the immense cosmological and astrophysical question that
appeared in the nineteenth century in thermodynamics with the so-called second law of thermodynamics or law of entropy - and this is what also characterizes the approach of the mathematician and economist Nicholas Georgescu-Roegen.

The law of entropy is what literally ruins all those cosmic conceptions that were composed in the West even before Greece - from ancient Egypt to Mesopotamia, where the first astronomers appeared. These conceptions posited that the cosmos is absolutely stable, constituting what Aristotle would later call the fixed sphere, as opposed to the sublunary sphere - the world beneath the Moon, that is, the world in which we live, and a corrupt world, a world of degeneration. Degeneration, however, is what we would today call entropy, degradation, decomposition.

For the Greeks, the fixed sphere was that of the Immortals. For monotheism, it was the sphere of the Eternal, that is, the heavens. Or, in other words, the sphere of Being - τὸ οὐ - which also constituted ontotheology, a discourse on being that was also a discourse on God. Becoming, in such a vision, is a sublunary reality, which is in truth to say a non-reality: an illusion concealing what, after Plato, was thought in terms of essences, themselves considered as eternal within a Being itself united, perfect and immutable.

The Universe, which at that time was called the cosmos, was thus conceived as a phusis within which an illusory movement occurs, resting on a perpetual movement, perpetually returning to the same, the true movement of Being, of which the fixed sphere is the spectacle, to be contemplated with what the Greeks called theoria - this movement of Being always returning circularly to the same.

There is no time now to detail the way in which, from the sixteenth and seventeenth centuries, the West's
perspective on the cosmos will change – which Alexandre Koyré will describe in his major work, *From the Closed World to the Infinite Universe*. But I would like to point out that what happens after Copernicus, Kepler and Galileo is that Western cosmic thinking shifts from geocentrism to heliocentrism and from heliocentrism to a new conception of an infinite cosmos, no longer a closed ‘fixed sphere’. This standpoint will arise on the basis of a new conception of space, itself become infinite, starting with Descartes, feeding into Newtonian thought and leading to modern physics.

While leaving geocentrism behind, however, modern physics maintains the conception of a cosmos always equal to itself – where space is infinite to this extent. And to this extent, the equality of the universe with itself in its infinity does not fundamentally unsettle the frameworks of ontology that lie at the base of metaphysics since Plato and Aristotle, and that are maintained with Descartes, Newton and Kant: Being is always considered as that which is opposed to becoming, insofar as Being is equal to itself, while becoming is contradictory with itself.

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The nineteenth century saw a scientific event of colossal scope, still widely underestimated, an event positing, on the basis of the physicist Sadi Carnot’s investigation of the steam engine, that energy is what irreversibly dissipates: it tends irresistibly to spread through the universe.

This first formulation will be taken up again in 1865 by Rudolf Clausius, who bestows upon this principle the name of *entropy*, making it a thermodynamic law of general physics. From the twentieth century until now, this will lead to a completely new conception of the universe, which, via Edwin Hubble, Ilya Prigogine and many others,
will put the question of the arrow of time at the centre of physics.

This question remains unresolved, as shown precisely by Prigogine’s work, which on this point disputes official astrophysics. The latter has, however, fully accepted the theory of thermodynamics, which is homogeneous with the theory of the expansion of the universe that Einstein initially rejected, that Hubble demonstrated in 1929 and that is the outcome of what we call the Big Bang: the universe appears as a transformational process that is utterly homogeneous with the law of the dissipation of energy in the universe, with the law of entropy.

In 1944, negative entropy, or anti-entropy, or again negentropy, become the definition of what we call ‘life.’

A consensus exists in the scientific community, whether among physicists or chemists or biologists, that life is what defers the process of entropy, that is, what retains energy, transforms it and organizes it into organs, organizations that constitute organisms. The latter is what they have been called ever since Lamarck. But negative entropy has been referred to only since Schrödinger. Even if Bergson, Freud and a number of others circled around these concepts, the scientific formulation of negative entropy, or negentropy, dates, in the biological field, from Schrödinger. This concept of negentropy is also present in information theory, cybernetic theory and systems theory, as well as in complexity theory. It aims first and foremost to define the very notion of information and the manner of functioning of those informational machines that are cybernetic machines.⁴

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All this leads me to make the following two assertions:

• Firstly, exo-somatization is a *bifurcation* in the history of life, that is, a new regime of negentropy irreducible to biological negentropy, falling within what I call a neganthropology. *Anthropos* is the being who produces *anthropization*, in the sense it is used in geography – where one refers to *anthropized milieus*, and these anthropized milieus, which is to say refashioned by man, produce entropy. At the same time, anthropized milieus also produce – locally – negentropy. This negentropy, however, is of a different nature than that resulting from purely biological life, and, in particular, it locally develops and pursues the process of exosomatization. This is why it is spelled as *anthropy*, and why I posit that it is produced by a neganthropology, that is, by cultures that save and economize entropy, differing from and deferring it – by releasing it outside themselves, but in a relative way, such as by releasing it into the atmosphere – and which, in order to save entropy, in the sense of locally deferring it, reduce it locally, produce *artificial organs* and exo-somatize the organogenesis that, as a result, is no longer simply negentropic but neganthropic.

• Secondly, exosomatization can produce neganthropy only on the condition of *producing forms of knowledge*, that is, *therapeutics*, which are in fact cultures of exo-somatized organs allowing more negentropy than entropy to be locally produced – but always by producing, outside the locality, an increase in the rate of entropy in the universe, and more precisely in the biosphere. In other words, a *pharmakon* can locally produce both entropy and negentropy. When it is implemented to strengthen negentropy, it becomes neganthropological: it contributes to the differentiation of *Anthropos*, and
thus to the différance of *Anthropos*, to differing and deferring the end of *Anthropos*, or in other words its disappearance. By differentiating itself in this way, and so as to defer its end, this *Anthropos* is above all, as the pursuit of exosomatization, a *Neganthropos*.

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What man today calls the *Anthropocene* raises all these questions in an unavoidable way – of which Fukushima is one of the most tragic and catastrophic examples over this period of 250 years, and which is intensified in an extreme way by what has come to be known as *disruption*, the latter consisting in an *acceleration of acceleration*, so to speak, a sudden acceleration of technical innovation that has greatly sped up since 1993, with the World Wide Web and the spread of reticulated computing technologies, considerably increasing the rate of entropy in all respects.

This is why it is inconceivable for us to remain in the Anthropocene. We will have to conceive, invent and exosomatize the Neganthropocene, and for that, we need a neganthropology that will allow us to enter into a *new era*: the Neganthropocene is not simply a new *epoch* of exosomatization; it is a new *era* of exosomatization, and perhaps a change in the regime of exosomatization. But *before that*, it is a new age of political economy.

II

What I have just said forms part of a noetic dream. What lies at the origin of all exo-somatization is the *dream*. The dream is the subject of a debate and a conflict between Foucault and Derrida (with respect to its status in Descartes). An interpretation of the dream is what we also owe to Hayao Miyazaki, who takes up a
poem of Paul Valéry, *Le cimetière marin*, which was also the origin of a novel by Tatsuo Hori, *The Wind Has Risen*. Miyazaki proposes a reinterpretation of both this poem and this novel by referring to a Japanese engineer, Jiro Horikoshi, who was also the designer of the Mitsubishi ‘Zero,’ and in this respect a key player in the Second World War and in the role played by Japan in this war thanks to its extraordinary aviation.

This aviation was extraordinary because it was equipped with these extraordinary planes, Mitsubishi ‘Zero’ fighter-bombers that inflicted heavy losses on the US military at the beginning of this conflict. And it became terrifying because the pilots of these planes would in 1944 become what were called kamikazes. If I refer to this film, and through this film to this history, it is because Jiro Horikoshi, in *The Wind Rises*, is an extremely seductive and delightful young man, with whom we can only want to identify, who possesses a quite remarkable delicacy, in particular in the love story with an ill young woman who will die, a story inspired in Tatsuo Hori by *The Magic Mountain* – a story that Miyazaki takes up from Hori, and which he combines with that of Jiro Horikoshi.

When he was very young, still a child, Jiro was a *dreamer*. He dreamed of flying. And he is inspired in his dream by another engineer, Giovanni Battista Caproni, one of the great aircraft designers of the twentieth century.

The dream of flying, Binswanger tells us, is deeply rooted in our imagination and is found almost everywhere. It is very common, for example, in Asia: I have engravings in my house from China and Japan where flying beings are represented, sometimes people, sometimes dragons – dragons being themselves flying serpents, and the serpent being itself the symbol of the *pharmakon* in Greece, which is also to say the symbol of
technics, and which is Aby Warburg’s obsession through the serpent ritual.

We also know the dream of flying from another extraordinary engineer who was also an artist, Leonardo da Vinci, who inspired what, four centuries later, would be realized by Clément Ader. That is to say, the plane.

The plane allowed me to come to Tokyo, and will soon allow me to go from Tokyo to Hong Kong. Planes were also what bombed Pearl Harbor, then dropped the bombs on Hiroshima and Nagasaki that opened what Heidegger called the atomic age. The plane is the realization of a dream, a dream of humanity, of which Icarus is the mythological embodiment, and this plane is a pharmakon.

This pharmakon, which today consumes large amounts of kerosene and produces large amounts of CO₂, is, however, less energy-consuming than Google’s American data centres. Google: which is also the realization of a dream, including a dream that I myself had in the late 1980s. This dream, which was also the dream of a completely different society, made possible by the Web and digital technology, is now in the course of becoming a nightmare, in this very moment, in what we call disruption.

This is possible because the dreams that we mortals fashion are noetic, that is, dreams that we realize – and which, in being realized, pursue the process of exosomatization: noetic dreams are realizable dreams in the long or the short term, and under more or less acceptable conditions.

To dream, for example, of sleeping with your mother, or with your sister, or with your father, or with your brother, to dream of what is called incest, is realizable.

This is in general repressed in all societies, according to Lévi-Strauss, but, according to Freud, it is also what haunts all societies. Was Freud right or wrong to begin his theory of libido in this way? Let us
leave this question to one side. On the other hand, the status of the dream in psychoanalysis, and more generally in the twentieth century, especially in anthropology, and for example with regard to the ‘dreaming’ studied by anthropologists in Australia, this status within noesis since its origin deserves to be raised from the standpoint of exo-somatization.

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It is on the status of the dream in Descartes that Foucault and Derrida will disagree. In History of Madness, Foucault argues that Descartes separates reason from madness – and he structurally ties this to the fact that Descartes published his Meditations in 1641, shortly before what he calls the ‘great confinement’ of 1656, which is the creation in Paris of the Hôpital Général where the mad will be confined. For Foucault, this amounts to the beginning of modern Western society.

Derrida opposes Foucault:

• on the one hand, by recalling that it is the experience of doubt inasmuch as it leads to the ‘hypothesis of the evil genius’ that lies at the heart of the Meditations, and that this hypothesis is that of a total madness;

• on the other hand, by arguing that the dream is only an attenuated form of madness – meditation being itself a kind of waking dream: in order to methodically put into doubt what he calls his ‘créances,’

Derrida wants to show, contra Foucault, that what is excluded is not, in and of itself, madness: it is illusion in general, in life, in dreaming or in madness, and above all sensory illusion:
All significations or ‘ideas’ of sensory origin are excluded from the realm of truth, for the same reason as madness is excluded from it. And there is nothing astonishing about this: madness is only a particular case, and, moreover, not the most serious one, of the sensory illusion which interests Descartes at this point.7

When Descartes formulated the hypothesis of ‘a more common, more universal experience than that of madness: the experience of sleep and dreams,’ he envisaged, at the heart of the life of the mind, at the heart of reason, ‘the possibility of an insanity – an epistemological one – much more serious than madness’9, which will lead, Derrida tells us, to the ‘hypothesis of the evil genius’:

Descartes has just admitted that arithmetic, geometry, and simple notions escape the first doubt, and he writes, ‘Nevertheless, I have long had fixed in my mind the belief that an all-powerful God existed who can do everything....’ [...] The hypothesis of the evil genius will evoke, conjure up, the possibility of a total madness [...] that will no longer be a disorder of the body, of the object, [...] but [...] will bring subversion into pure thought and into its purely intelligible objects, into the field of clear and distinct ideas, into the realm of mathematical truths that had escaped natural doubt.10

Madness is what, in the thought of Descartes, originally haunts the very possibility of thinking: this is what Derrida will attempt to show, counter to the Foucauldian thesis according to which the classical age is constituted by Descartes in the Meditations through the exclusion of madness from thinking. And this is the issue of what he calls hyperbolical doubt, which is the hypothesis of the evil genius:

The hyperbolical audacity of the Cartesian Cogito, its mad audacity [...] would consist in the return to an original point which no longer belongs to either a
determined reason or a determined unreason, no longer belongs to them as opposition or alternative. Whether I am mad or not, Cogito, sum. Madness is therefore, in every sense of the word, only one case of thought (within thought).\textsuperscript{11}

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Foucault, who does not respond to this argument concerning hyperbolical doubt, will, however, completely reject Derrida’s assertion of a continuity between dream and madness by positing that for Descartes, the dream is not at all the same thing as madness. I myself believe that he is absolutely right to argue that dream and madness should not be confounded, and that the dream is of another dimension. I also believe that the dream obviously communicates with madness, that it is essentially linked to the possibility of madness, even if it is not madness, not even in a degraded or attenuated form.

To conclude this analysis, I would like to make two points:

• on the one hand, Foucault, like Derrida, profoundly overlooks what lies at the heart of Cartesianism, and which is developed not in the Meditations, but in the Rules for the Direction of the Mind;

• on the other hand, Foucault’s whole discourse on the dream in Descartes comes out of a reading he undertook and published seven years earlier of a book by Ludwig Binswanger, Dream and Existence, where he confers on dreaming a function that I will try to convince you is the condition of exosomatization – which Foucault himself does not take into consideration, however, and this is why he overlooks the question raised by Descartes via Rules Fifteen and Sixteen in the Rules for the Direction of the Mind.

Here is what Descartes tells us in the fifteenth of these Rules:
It is generally helpful if we draw these figures and display them before our external senses. In this way it will be easier for us to keep our mind in a state of attention.\textsuperscript{12}

Here, Descartes posits in principle that, in order to direct his thought, he must exteriorize it, and, in so doing, make it an object of a form of attention that this exteriorization itself makes possible – and already as the realization of the dreaming in which all thinking consists.

With Rule Fifteen, Descartes places attention at the heart of what, for modernity, is his foundational approach, by defining attention as analytical capacity. The issue is not representation, but rather the exteriorization of representation, in the form of points, lines and surfaces that enable us to ‘fix our attention’\textsuperscript{13} – where this also amounts to the fixing of the already there of our thinking, which thereby reflects upon itself through the fact of its self-exteriorization. Leibniz will say the same thing in almost the same terms. And Husserl would no doubt have read and reread this rule, as well as followed it, before writing ‘The Origin of Geometry.’

In Rule Sixteen, in fact, it is no longer a question of attention, but of retention – and it is, more precisely, a matter of what, since \textit{Technics and Time, 1}, I have called tertiary retention, that is, artificial, technical and exosomatic memorization, which already, for Descartes, becomes a kind of automaton:

As for things which do not require the immediate attention of the mind, however necessary they may be for the conclusion, it is better to represent them by very concise symbols rather than by complete figures. It will thus be impossible for our memory to go wrong, and our mind will not be distracted by having to
retain these while it is taken up with deducing other matters.14

Preparing the way for Leibniz's Characteristics as the fulfilment of the *mathesis universalis*, Descartes here describes the conditions in which analysis can and must constitute itself in and by its exteriorization, such that the analytical function of the understanding can then be delegated to this exosomatization of mental life. Memory, this rule tells us, 'is often unreliable,'15 and this is what Derrida, commenting on Husserl's 'The Origin of Geometry,' will call 'retentional finitude.'16 This can, however, be overcome, by

the practice of writing. Relying on this as an aid, we shall leave absolutely nothing to memory but put down on paper whatever we have to retain, thus allowing the imagination to devote itself freely and completely to the ideas immediately before it.17

Descartes, here, apparently does not recall Socrates's warnings in *Phaedrus* about hypomnesis as the pharmacological condition of anamnesis: he makes no mention of this issue. On the other hand, he does describe that which will inaugurate the coming realization (in the nineteenth century, with Charles Babbage, Ada Lovelace and Herman Hollerith) of a new stage of grammatization, which will be made possible by what, in Descartes's time, will become algebra, which is also the condition of the algorithmic:

put down on paper whatever we have to retain [...]. We shall do this by means of very concise symbols, so that after scrutinizing them (in accordance with Rule Nine), we may be able (in accordance with Rule Eleven) to run through all of them with the swiftest sweep of thought and intuit as many as possible at the same time.18
These *Rules*, too, will provide the axiomatic outline of a treatise on the algorithmic that will be brought to completion only with Leibniz.

Therefore, whatever is to be viewed as one thing from the point of view of the problem we shall represent by a unique symbol, which can be formed in any way we like.¹⁹

This way of describing Cartesian analysis lies at the origin of Kant’s distinction between understanding and reason. But this analysis is possible only as a new stage of grammatization, which is obviously not unconnected with the rise of movable type in the epoch of printing, for which the shock of the Renaissance paves the way, and which will be concretized as a new technological shock and a new stage of the exosomatization of the mind with the US census of 1890.²⁰

Descartes lies between two shocks provoked in the life of the mind by the process of grammatization as exosomatization of the life of the mind and spirit, which, set outside itself, interiorizes itself by already dreaming of the next stage of its self-exosomatization — a chain reaction that typifies that which opens the possibility of the Anthropocene, in which self-exosomatization ineluctably becomes hetero-exosomatization.

This is what we are currently living through in the disruptive divorce of computational understanding and reason, which, as rationalization, becomes computational unreason — the (mis)calculated loss of reason (and on this question, I refer to my book, *Automatic Society, Volume 1*, §§16, 18 and 28).

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Seven years before *History of Madness*, in his introduction to Binswanger’s *Dream and Existence*,
Foucault argued that the dream is the origin of human freedom. This is extremely important, because, on the basis of Binswanger, it opens up the possibility that the dream, as what I call the noetic dream – the dream of the one whom Heidegger names Dasein, which is also the dream that Freud conceived as lying at the heart of the libidinal economy – is the origin of exosomatization as well as the fruit of this exosomatization.

This is what I maintain by relying on prehistorical and palaeo-anthropological work. Marc Azéma, a specialist in parietal art, has shown that the cinema begins with rock paintings in caves, and that this projection onto the walls of caves – which are a kind of first cinematographic projection – constitutes an arche-cinema, a thesis that I myself developed in Technics and Time, 3. Azéma shows that we can observe this development of parietal art since the Magdalenian – that is, 30,000 years ago.

What Azéma’s work highlights is that within this history of exosomatization, periods of exosomatization occur – and in particular, starting from the Magdalenian, this period in which mental contents begin to be realized as processes of the exteriorization of dreams as such.

In reality, from the beginning of hominization, inasmuch as it is constituted by what Leroi-Gourhan calls a process of exteriorization, humanity realizes its dreams through what Ernst Kapp called organic projection, by projecting artificial organs outside of itself. Initially, this projection unfolds at the very slow rate of genetic drift, which is to say, over hundreds of thousands of years. But for exosomatization to exteriorize the contents of dreams, and not simply the organs arising from the contents of these dreams, it is necessary to wait, probably for the Neanderthal period. What is certain is that this had occurred by the
time of the Magdalenian: because we have parietal traces.

Hence are constituted the hypomnesic supports of tertiary retentions.

Tertiary retention arises from the beginning of hominization, with exo-somatization, in the form of tools. But that mental contents had become transmissible to others, and thus ‘hypomnesic,’ is certain only starting from the Magdalenian – as the exteriorization of visions that men had of animals, and of other men and women. It is this process of exteriorization that enables the noesis of Homo sapiens sapiens. It is Homo sapiens sapiens who inherits the knowledge composed of mental contents that become progressively accessible from generation to generation until, passing through Chinese, Egyptian, Mesopotamian, Phoenician, Hebrew and Greek writing, supports of the transmission of knowledge appear that are no longer dedicated simply to work-knowledge and life-knowledge, but to knowledge that becomes increasingly spiritual, theoretical, academic and scientific, constituting the field of what since modernity we call reason in the strict sense.

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In 24/7: Late Capitalism and the Ends of Sleep, Jonathan Crary shows that in the age of disruption, with the reticular society of hyper-control, contemporary capitalism leads to the loss of the ability to dream. Now, the faculty of dreaming is the condition of the faculty of knowing. To know is not simply to analyse, objectify and calculate: it is to produce bifurcations, it is to implement the function of reason as defined by Whitehead so as to make noetic life possible in the universe, and thus to do so in the context of entropy – in order to defer entropy, which I believe to be the true stakes of what Derrida called difféance with an
‘a.’ But Derrida himself did not see this clearly, and he never made it thematic.

Now is the time for this thematization. And this is why it is time to take seriously what Binswanger and Foucault tell us, but while taking equally seriously what Azéma shows, namely, that noetic man is above all an oneiric man. This oneiric and noetic form of life has the capacity to exteriorize its dreams and thus to realize them in the form of technics—the issue being that technics produces pharmaka, which can always turn the dream into a nightmare.

This is what we are living through, and it has reached an extreme point where the prevention of dreaming also amounts to a denoetization. It is also what we lived through with Fukushima: it is what we are experiencing with disruption in general. This is what was revealed in the twentieth century, starting from Hiroshima and Nagasaki. It is also the issue in Miyazaki’s film, The Wind Rises.

Thinking—noesis—is also a technesis. Technesis is itself the result of an exteriorization of the contents of dreams and their realization in the form of pharmaka. Reason in the broad sense is capable of producing not only pharmaka, which today have become the systems and institutions of what Heidegger called calculative thinking, that is, an exteriorized and automated form of the understanding, but also what he called meditative thinking, which is reason insofar as it exceeds calculation, in this way making it possible to produce neganthropic, that is, incalculable, bifurcations: such is the function of reason in Whitehead’s sense.

Heidegger opposes meditative thinking and calculative thinking, and in this he is absolutely wrong: both of these forms of thinking belong to the cycle that occurs as exosomatization through dreams and as the realization of dreams that can become nightmares and that call for other dreams in order to combat these nightmares. All
this is what must compose with ὤγρις, which is the origin of crime as much as of genius, as well as of madness in the sense of Foucault and Derrida, but which neither Foucault nor Derrida thinks as the organological and pharmacological condition, on which the myth of Epimetheus meditates, and where Prometheus commits the crime of stealing fire.

At the end of the Anthropocene, in the epoch of disruption, which makes obvious that the Anthropocene is no longer sustainable, no longer liveable, we rediscover the necessity of negentropy inasmuch as it requires the elaboration of a neganthropology.

If in the coming years we do not learn how to produce a new culture of tekhnē, new therapies for pharmaka, we will send life on this planet to its doom. And this means that we must relearn how to dream. To dream does not just mean to sleep: at night, in the dream, the field opens up of what Freud relates to the unconscious and Lacan relates to language – but which firstly stems from the imagination as the free play of the production of images through the dialogue between the imagination and the understanding, to use Kantian terms, a free play in the dream, which Binswanger and Foucault rely upon in order to try to rethink the dream as freedom – that is, as negentropy.

Freedom is what produces negentropy, it is what generates negentropic acts. Freedom does not mean the freedom to choose between Coca-Cola and Pepsi-Cola: it is the freedom to combat an entropic state of fact in order to establish a new negentropic reality. This entropic state of fact is precisely a state of fact within which a new negentropic reality sets up a new state of law – and I have tried to defend this new conception of law, understood in this sense, in Automatic Society.

This requires an understanding of the dream as a process: we do not dream only at night, we have diurnal
dreams, as Freud well shows, and this is also what Paul Valéry shows in his *Notebooks* on dreams. And this is what must lead us towards an economy of negentropy. This economy is a new libidinal economy, or, more precisely, it is a reconstitution of libidinal economy. Every true libidinal economy is an economy of negentropy. Negentropy is what produces binding, and, through this binding, a différance. This binding and this différance are those of the bonds formed by αἰδως and δικη.

This must also lead to the new industrial economy that we call the contributory economy, with which we have been experimenting since 2017, on the contributory learning territory of Plaine Commune, where 430,000 inhabitants live in the northern suburbs of Paris: see recherchecontributive.fr.

*Translated by Daniel Ross.*

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2 As for idiocy, it is *like a typical hybrid of stupidity and genius*. The idiom, that is, the language shared by its speakers, and singular for those who do not speak it, as well as the singularity of an idiolect, that is, a single individual’s singular way of speaking, in relation to other people who speak the same idiom differently, is what bears the promise of genius. Poetry is what transforms the arbitrary singularity of a language, for example, into this sublime and obvious necessity that we call poetry. Idiocy is in this respect what bears witness to a (de)fault – but such that, as a singularity that becomes the potential of a poetic idiom, for example, it is also the promise of that which is necessary.
4 I must say that I am rather reserved about all these conceptual transfers, which occur on the basis of the work of Claude Shannon, Léon Brillouin and Norbert Wiener in the 1940s and 1950s – but I will not take the time to say why here.


8 Ibid., p. 51.

9 Ibid. Translator’s note: The word translated as ‘insanity’ here is ‘extravagances’.

10 Ibid., pp. 52–53, translation modified.

11 Ibid., p. 56.


13 Ibid., translation modified.

14 Descartes, ‘Rule Sixteen’, in ibid., p. 66.

15 Ibid., p. 67.

16 It is odd that Derrida, to my knowledge, nowhere refers to these Rules, and especially odd that he does not do so in his introduction to ‘The Origin of Geometry’. Husserl clearly had Rules Fifteen and Sixteen in mind when he gave this lecture, as he did when he analysed the *crisis of the European sciences*.


18 Ibid.

19 Ibid.

20 Translator’s note: In 1890, for the first time, the United States census utilized tabulating machines, commissioned by the American Census Bureau after the 1880 census. See Alain Desrosières, *The Politics of Large Numbers: A History of Statistical Reasoning*, trans. Camille Naish (Cambridge, Massachusetts and London: Harvard University Press, 1998), p. 197: ‘In 1890, the enormous amount of manual work involved began to decrease with the use of the first mechanographic machines, invented and constructed by an employee of the bureau, Herman Hollerith (1860–1929).’ By 1896, these machines were being used for the French census. Ibid., pp. 253–54: ‘The population census of 1896 included questions on the economic activity and the address of the firm where each person questioned worked, as well as on his occupation. The systematic use of these twenty or so million individual bulletins on active persons was centralized in Paris thanks to the new Hollerith mechanographical machines with their
punched cards. It allowed a statistics of industrial and commercial interests to be drawn up, apportioning the active population according to the activity and size of the firms and the sex and type of employment of the people questioned.’