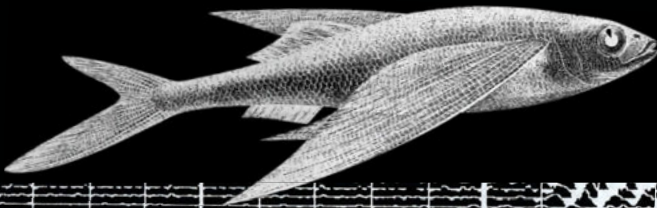


Bernard
Stiegler

THE NEGANTHROPOCENE

EDITED, TRANSLATED, AND WITH
AN INTRODUCTION BY DANIEL ROSS



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The Neganthropocene

Edited, translated, and with an introduction by Daniel Ross

CCC2 Irreversibility

Series Editors: Tom Cohen and Claire Colebrook

The second phase of 'the Anthropocene,' takes hold as tipping points speculated over in 'Anthropocene 1.0' click into place to retire the speculative bubble of "Anthropocene Talk". Temporalities are dispersed, the memes of 'globalization' revoked. A broad drift into a de facto era of managed extinction events dawns. With this acceleration from the speculative into the material orders, a factor without a means of expression emerges: climate panic.

Bernard Stiegler

The Neganthropocene

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Introduction

Daniel Ross

Reason is the special embodiment in us of the disciplined counter-agency which saves the world.

Alfred North Whitehead

Yet what needs doing, could he see his and his world's true need, he could do, no one else so capable of it or so ready for it. He *could*. It's a free country. But it will take a change of consciousness. So phenomenology becomes politics.

Stanley Cavell

To hear that somebody has 'converted' immediately brings to mind the idea that they have gone through some kind of 'religious experience' whose outcome was a change of faith, that is, a transformation or reorientation of belief. But from the outset, such a conversion also has its place in philosophy, marked initially by the experience of wonder that Socrates described as the first and only beginning for both philosophy and the philosopher,¹ even if today we can recognize Nietzsche's foresight in calling for a philosophy that would begin not with wonder but with dread.² In truth, whether wonder or dread, such a beginning is not just an experience but an interruption of one way of seeing through which another way of seeing opens up: so it amounts to a *conversion of the gaze*. But such a transformation also sounds awfully like the starting point of that *particular* philosophy that is Husserlian phenomenology, which seeks a way into phenomena through an interruption of the *ordinary* that Husserl sometimes calls the 'natural attitude' – this phenomenology begins with an *epokhē*. Bernard Stiegler begins to philosophize, we would like to argue, thanks to just such a conversion of the gaze, and this inauguration is followed by two others, the third of which is expressed in the collected texts that compose this volume.

Long before the invention and institution of the university, philosophy was a way of approaching the question of how to live, a way that, if it does indeed arise from out of an individual experience of the extraordinary (or, rather, of the extraordinariness of the ordinary) that we could call 'existential', is nevertheless immediately drawn into the

collective problem of how to live with others, which is to say in the city, the city *as a problem*, and a problem occurring, always, within the specificity and locality of a ‘here and now’: this is its epochality. If the condition of possibility of the first proto-human *gatherings* was the acquisition of fire that provided so many benefits so long as it was carefully tended, and the condition of possibility of *sedentarization* was the development of agriculture that promised to diminish the risks to subsistence so long as the grain and the cattle were carefully cultivated (with all the invocations of cosmic beneficence this required), the condition of possibility of the *political* city was, above all, the invention of alphabetical writing, which, so long as it was widely taught and learned, opened the possibility of a law that was public, deliberative and (thanks to its exactitude) interpretative – that is, requiring *decision*. Such an innovation opens, therefore, the possibility of deciding otherwise, of *re-organizing* collective existence within a particular locality, and thereby ‘spontaneously’ raises the question, which is to say the challenge and the problem, of the *basis* (that is, the reasons and motives) on which to do so. Hence: if it is true that questions become possible when they become necessary, then the necessity that led to the question of philosophy was, above all, that imposed by the city in crisis, and in strife – threatened with *stasis*.

Let us say, then, that the *discipline* of ‘philosophy’ – assuming that something more than nostalgia lies behind our desire to hold onto this name for what has mostly become either academic scholasticism or publishing fashion, hence without ruling out that something bearing this name may indeed have died yesterday or the day before, and yet recognizing that it may be in the encounter with its own exposed mortality that it will finally and for the first time have the opportunity to become what it promises to be (which may, who knows, require some other name than philosophy) – let us say that philosophy always involves, in one way or another, taking the measure of ‘today’, that is, of the epoch in which it is (almost always) *written*, so that, making an *advance* upon that epoch, and through the socialization of the ideas advanced by the writer and the desires they express, there is hope of fruitfully surpassing that epoch, or, in other words, of performatively and affirmatively contributing to the necessity of its individuation. But this is also to say that, in feeling the necessity of questions that may hitherto have remained generally opaque, the philosopher strives to make the difference through which this necessity becomes ours, and so contribute to the transformation of our shared milieu by making possible the adoption of an imagined but possible future, however improbable.

If so, what do we make of, say, the epoch of the last ten years? Surely the following five milestones, signposts, symptoms and tendencies would be among those requiring delineation and critique:

- on 26 September 2006, Facebook was made universally available, opening what was to become the age no longer just of the digital (with the integrated circuit dating from 1958 and the first CPU from 1971), or of the network (with the global opening of the World Wide Web in April 1993) but of the ‘social’ digital network, whose effects have thus far proven to be, paradoxically, overwhelmingly and literally anti-social (in spite and because of the relentless rise of its ‘popularity’), as well as, in a sense, anti-network, in that such networks largely consist in a systematic attempt to maintain users within an algorithmically-controlled and increasingly image-based ‘feed’, and to diminish interaction with a links-based internet³;
- on 29 June 2007, Apple launched its first iPhone, opening the age of the capacitive multi-touch ‘smartphone’, that is, of the ubiquitous, portable and permanently-connected input/output screen, which has become the two-way interface through which ‘users’ experience virtually all external events and their own (Facebook-mediated) lives, while simultaneously relaying the ‘data’ they produce through interacting with these touchable screens back to the algorithmic programs of the electronic Leviathan;
- by the end of 2007, the ‘subprime mortgage crisis’ in the United States had become manifest, exposing the corrupt character of financialization and the highly speculative character of ‘investment’, as well as the irrational reliance on automated high-speed trading, leading in September 2008 to the collapse of Lehman Brothers and the unfolding of a global financial crisis whose causes were largely identifiable but proposed solutions for which were non-systemic and in any case left unimplemented, resulting in worldwide economic stagnation (with the notable exceptions of Alphabet, Apple, Facebook and Amazon) combined with the continued risk of further bubbles and crises (such as in Greece);
- the disastrous foreign policy decisions of the United States going back to at least 1990, when George H. W. Bush launched Operations Desert Shield and Desert Storm,

and, after 9/11, to 2003, when George W. Bush launched Operation Iraqi Freedom, would continue to unfold their ever-proliferating consequences, through the turmoil and contradictions of the Facebook-mediated ‘Arab Spring’ (beginning in late 2010) and the resulting turmoil and contradictions of the civil uprising in Syria (2011) that would lead to an extremely brutal civil war whose calamitous character would feed into the creation of the so-called Islamic State of Iraq and al-Sham (adopting this name in April 2013), leading in turn to a long sequence of attacks using guns, bombs and vehicles as deadly weapons, including, among numerous others, the Charlie Hebdo shooting on 7 January 2015, the co-ordinated attacks in Paris on 13 November 2015 and the Nice attack on 14 July 2016, along with all the turmoil and contradictions of the police, military and ‘security’ responses to this wave of terrorism;

- we have seen the rapid development of artificial intelligence technology (spearheaded by Alphabet) and robotic technology (exemplified by Amazon’s purchase of Kiva Systems in 2012, and subsequent cessation of all new customer contracts), leading to many predictions of a coming wave of automation that will lead to widespread job destruction no longer limited to manufacturing but instead extending to many other areas of employment, contributing to ‘disruptive’ ‘Uberization’ and potentially threatening the Fordist-Keynesian-welfare state compromise that has formed the crux of the redistribution process underpinning the consumerist, perpetual-growth macro-economic model that has reigned since the end of the Second World War.

Overarching all of these developments and tendencies, however, are two other challenges whose scale and profundity call out for a response, that is, for a theory and a practice capable of taking and assuming responsibility:

- there is the dawning awareness that industrialization in the nineteenth century and hyper-industrialization in the twentieth century has had numerous deleterious effects that are now being felt at the level of the biosphere itself, including (but not limited to) the crisis of climate change, leading to the proposal that we have entered into a new geological epoch, the Anthropocene (whose adoption was recommended by the working group dedicated to

this question on 29 August 2016), an epoch in which such anthropogenic effects would have become the major contributor to geophysical change, or, in other words, an epoch coincident with the ‘anthropization’ of the planet and its systems, while threatening, in its unsustainability, to lead to its eventual de-anthropization;

- there is, finally, all about us, evidence of a deterioration of political faith, belief, trust, hope and will, and a corresponding rise of a desperate, reactionary and xenophobic anti-politics all too willing to designate scapegoats and appeal at every opportunity to fear and stupidity, culminating (so far) in the election (on 8 November 2016) of a reality-TV huckster to the presidency of the United States of America and a growing understanding that a polity of performatively-generated filter bubbles, of ‘audiences’ rather than citizens, no longer conforms to the minimum requirements of ‘democracy’ understood as a representative system in which the power to make collective decisions resides in the *demos* – the so-called Trumpocene being, above all, a ‘post-democratic’ worldless world in which collective decision becomes strictly speaking impossible, because truth itself, losing its effective actuality, has somehow come to seem an irrelevant and obsolescent criterion.

Countless scholarly and popular works have already been written on all seven of these profound challenges. These are, once again: (1) the rise of *social networks*; (2) the growth of the *ubiquitous interactive screen*; (3) the *global financial crisis* as symptomatic of the tendency of investment to become increasingly short-term and speculative; (4) the proliferation of *geopolitical crises*, *terrorism* and related forms of individual and collective acting out; (5) *automation* as a threat to a consumerist macro-economic system founded on employment-based purchasing power; (6) the *Anthropocene* as an ‘existential threat’ to human existence and the biosphere; and (7) the unfurling of the consequences of *industrially-generated populism*, including the entrance into a so-called ‘post-truth’ age. Some of the books on these topics are undoubtedly fine works, indeed important ones. But, in relation to these challenges, two things are undeniable, and, in truth, at some level understood by everyone: on the one hand, these challenges all tend to combine and *synergistically* reinforce one another, in particular in terms of their destructive characteristics; on the other hand, they are all in contradiction with each other, so that a proposed

solution to a problem associated with one of these challenges inevitably has the effect of *antagonistically* diminishing potential solutions to other challenges.

Does anyone really believe that it is possible to ‘solve’ the problems of climate change, habitat destruction and cultural destruction without addressing the consumerist basis of the present macro-economic system, or vice versa, or without addressing the way in which this system *depletes* the psychic energy required to find the collective will, belief, hope and reason to address this planetary challenge? Can this consumerism really survive the coming wave of automation that threatens to decimate its customer base and undermine the ‘consumer confidence’ that is fundamental to its perpetual growth requirements, themselves antithetical, once again, to the problems of biospherical preservation? How *can* the collective intelligence and will required to address these problems be found, when these are precisely what thousands of the world’s best engineers are working so hard to dismantle algorithmically and telecratically, in order to extract every possible cent from advertisers in their perpetual quest to hijack attention and seize control of behaviour? And, in a world where stupidity and madness seem to be systemically produced, and where economic desperation continues to force journalism to regress to the cheapest (in all senses of the word) forms of sensationalism, what hope is there of preventing the growth not just of terrorism, but of suicidal and homicidal behaviours of all kinds, in turn contributing to the rise of far right movements, as has been seen throughout the industrial democracies?

In short, all these problems amount to the *eschatological* questions that arise when a system reaches its *limits*. What do we mean by a system? Any system is a bounded (that is, *limited*) dynamic process that always arises from out of certain background conditions (from a preindividual milieu), in so doing achieving *relative* stability. But if it is bounded (marked by a boundary), for a system to *maintain* its relative stability (and therefore relative instability – ‘metastability’), it must nevertheless be *open* to exchanges that exceed those bounds, and that ‘feed’ the system: it is only through the economy of such circulations that it can remain within its limit conditions, whether the system is a spiral galaxy, a hurricane, a cell, an organ, an organism, an ecosystem or a technical infrastructure with its corresponding social and cultural systems. A closed system, cut off from any outside, is sure, sooner or later, to collapse. But an open system, too, insofar as it is dynamic, is only ever *relatively* stable, and once certain thresholds (limit conditions) are crossed, the system can only transform its character (becoming another system of a different kind) or fall apart – dis-integrate. When multiple limits are reached more or

less simultaneously, the process through which a system either transforms or destroys itself can only be hastened and intensified (which does not mean that it cannot last a long time). It seems entirely justifiable to see the unfolding convergence of limits reached by the present technical, social and ecological systems as amounting to a systemic *crisis* equivalent to a Category 7 Shitstorm.

What task, then, falls to the philosopher who so measures the character of an epoch in crisis, other than to *critique* those limits in their synergistic and antagonistic convergence, either to try and illuminate the path that turns the system towards the least destructive and most beneficial phase-shift imaginable, or, if it is too late for the catastrophe to be averted, to provide resources to those who, coming *after* the apocalypse, have no choice but to forge something new from out of the ashes (assuming there *is* someone and not *just* ashes)? To raise such a question risks being accused of purveying unduly pessimistic prophecies of doom. Such accusations have for many years, of course, been levelled not at philosophers but at climatologists – by so-called climate ‘skeptics’ and ‘deniers’. That these deniers are indeed in denial, and that scientists are not simply melodramatic purveyors of mass hysteria, is a judgment we continue to make based on the continuing *belief* we are able to maintain in the ‘objectivity’ of the scientific research that lies behind the modelling of future scenarios.

Climate modelling is an example of a field of knowledge that involves analysis of converging limits, but where these are the limits that fall within the fields covered by the sciences dedicated to describing the conditions of geological, meteorological, oceanic and ecological systems – systems for which this objectivity remains best practice. If we are to understand the character of our epoch, however, we must indeed pursue an understanding of the limits of all *these* physical and biophysical systems, but, at the same time, we must *also* understand the converging technical, economic, social, cultural and psychological limits of the systems of human existence. Furthermore, the so-called Anthropocene, as a proposed geological epoch, is not just a question for geological science, but a challenge, even a disruption: if the established objective method for epochal division depends on the long timescales associated with stratigraphy, the rapidity of anthropized change since the advent of the industrial revolution upsets the very basis on which such determinations have hitherto been made.

In this situation, a synthesis of various scientifically objective fields of research *cannot* suffice: what is required exceeds the division and conflict of the faculties. Why? Because this convergence of limits involves the question, the stakes, the conditions, the categories and the future of knowledge as such – that is, the faculty of reason

as such, or rather, in Whiteheadian rather than Kantian terms, the *function* of reason. What the crisis represented by this convergence requires, in other words, is a new critique, if not a hyper-critique: if the ‘post-truth’ age is one in which thinking itself is fundamentally challenged by the Anthropocene as *Gestell* taken to its limits, where calculation becomes so hegemonic as to threaten the possibility of thinking itself, then what this age amounts to is the challenge to think at the limits of the thinkable, and to care enough to do so.

• • •

The set of thirteen texts of which this book is composed trace a path pursued by Bernard Stiegler as he seeks to respond to the critical imperative arising from the systemic crisis of which these seven challenges are symptoms. Some words of introduction to this path are advisable, perhaps, because the early reception of the work of this French philosopher has too often tended, in the Anglophone world, to hastily presume Stiegler to be little more than an unfaithful acolyte of Jacques Derrida, one who, leavening his adoption of a deconstructive approach with an added dose of Leroi-Gourhan’s palaeo-archaeology, unduly circumscribes ‘différance’ onto a material, positivist and anthropocentric basis that Derrida’s supposedly richer account had always already exceeded. But in addition to misjudging Stiegler’s work, and being too willing to accept that the notion of the ‘quasi-transcendental’ is sufficient to secure the foundations and future of Derrida’s conceptual innovations, the *possibility* of such a (mis)reading stems from taking its first expression, in the first volume of *Technics and Time*, as an offshoot of Derrida’s work, rather than as a genuine confrontation. But by giving consideration to its much earlier provenance, it is possible to see how Stiegler’s philosophy is really against, but right up against, Derrida’s work – and also Heidegger’s.

More than one reason could be cited for the deficiencies of this (non)reception in the sphere of Anglophone philosophy. *Technics and Time, 1*, for example, resolutely ventured into fields and thinkers largely ignored by and uninteresting to this sphere, and did so precisely because, from the outset, Stiegler was concerned to take the measure of his ‘today’, and to exceed it in the direction of the future, as he indicated in the second paragraph of the introduction to the first part of that volume:

Today, we need to understand the process of technical evolution given that we are experiencing the deep opacity of contemporary technics; we do not immediately understand what is being played out in technics, nor what is being profoundly

transformed therein, even though we unceasingly have to make *decisions* regarding technics, the consequences of which are felt to escape us more and more. [...] More profoundly, the question is to know if we can predict and, if possible, orient the evolution of technics, that is, of power (*puissance*). What power (*pouvoir*) do we have over power (*puissance*)?⁴

But this reference to *puissance*, mobilized in a description of the powerlessness attending what Heidegger called *Gestell*, itself serves, in hindsight, as a clue: for, despite the influence of Simondon's anti-Aristotelianism, Stiegler's thought in fact gets going through a consideration of the relationship of potential and act, and of the *passage à l'acte* that would lead, much later, to the publication of the small work that would first describe Stiegler's first 'conversion of the gaze'.⁵

It was not until 2003, then, almost ten years after the publication of the first volume of *Technics and Time* and twenty years after this conversion took place (but he had already stated in the preface to *Technics and Time, 1* that the 'first delineations' of that work had occurred ten years earlier⁶), that Stiegler first described its general conditions:

My incarceration in Saint Michel Prison, result of a passage to the act, will have been the suspension of my acts and the interruption of my actions: such is the function of prison. But *interruption* and *suspension*, which are also the beginning of philosophy (Socrates' *daimon* is the one who interrupts), were for myself the *occasion* of a reflection on what *the passage to the act is in general* – and a recollection of *all the acts that brought me there*.⁷

Through this suspension and interruption of the world that the young Stiegler brought upon himself by acting out, he is led to the question of potential and act, and, more specifically, to Aristotle's account of three kinds of souls – the vegetative, the sensitive and the noetic soul – and to the way in which, according to Aristotle, the sensitive soul is *actually* sensitive, and the noetic soul *actually* noetic, *only intermittently*, perpetually threatened, in other words, by the possibility of falling back.

Wherein lies the possibility of the soul's *elevation* or *regression*, possibilities between which it consists in a kind of tension (that is, the tension of a struggle that he will come to understand as being between competing tendencies and counter-tendencies, and that equally amounts to the struggle to bind the drives, the struggle to *sub-limate* broadly conceived)? What Stiegler learns from Aristotle is that

the answer to this question has everything to do with the *milieu* of that soul: whether, as in the case of sight, it is a matter of the diaphanous membrane that opens up the possibility of colour and therefore of visual perception, or, in the case of the fish, of water. This milieu, as what is closest, all-pervasive and most intimate, is what is most difficult to apprehend. It is what, in the ordinariness of existence, is easiest to forget: this milieu may be that which potentially gives rise to questions, but its very transparency is, strangely, what gives these questions a paradoxical opacity whose overcoming requires a converted gaze.

Stiegler himself practised, in his cell, in the suspension of the world made possible and unavoidable by his incarceration, what for him became a necessity: a kind of phenomenological laboratory (doing so in ignorance of Husserlian philosophy) that amounted to a reflection on the world-as-milieu as if from outside (like water perceived intermittently from ‘above’ by a flying fish). Through this process of experimentation, brought about by a suspension and interruption, he was brought to ask: what is the intimate, all-too-easily forgotten milieu of the *noetic* soul? Thinking at first that it may have been language, he eventually concluded that it is, instead, much older, consisting in that exteriorized milieu in general which is the realm of technics as such. And, what is more, to the realization that, in the absence of the exterior milieu, his interior milieu (that is, his noetic soul, or, spelled otherwise, his psychic apparatus) consisted in nothing but the fabric of anamnestic memories woven and interwoven with the hymnesic traces left in and by artefacts (such as books) to which he continued to have limited access, forming an artificial memory and projective mechanism that would serve only to demonstrate, above all, the irreducibility of the exterior.

The noetic soul, the psychic apparatus, is, then, a struggle of tendencies and counter-tendencies playing out within and between the interior milieu that it ‘is’ and the exterior milieu without which it does not exist. And, since the exterior milieu, the technical milieu, cannot form without the noetic activity that made possible its *invention*, Stiegler concludes in *Technics and Time* that the origin of the distinction between interior and exterior can only ever be understood as a ‘default of origin’. Hence if, as the preface to *Technics and Time, 1* states, the object of that work is ‘technics’, which will lead some to conclude that the author’s project to describe the ‘pursuit of life by means other than life’ amounts to an anthropocentrism premised on the exclusion of non-human tool use, what is *really* at stake with technics is the opening of a new process of *conserving the past in the present*: with the first inscriptions in matter of the gestures of the

inscriber, there begins to unfold a history of ‘organized inorganic matter’ inaugurating an artificial selection process that ultimately tends to suspend processes of natural selection. This new retentional process, which is in some way the advent of new *memory*, grants access to the possibility of knowledge as such, because it opens up a trans-generational process collectively conserving, accumulating and hence perpetually stabilizing and transforming the lessons of individual experience. It is for this reason that the noetic soul, arising after the default of origin, is a struggle of tendencies: this soul’s potential for elevation depends on the *desire* to know, requiring the constant undertaking of practices of care and learning made possible by exteriorized memory, but perpetually threatened by the regressive possibilities of forgetting, barbarism, and, in general, of succumbing to the inhuman.

With this notion of a default of origin between the exterior and the interior, Stiegler will articulate his account (in *Technics and Time, 1*) of technical exteriorization as a ‘third kind of memory’ (in addition to genetic memory and nervous memory), that is, of the exterior milieu, with his critique and extension (in *Technics and Time, 2*) of Husserl’s account of the relationship between retention and perception, that is, of the interior milieu. For Husserl, striving to understand the phenomenal constitution of an experience of temporal continuity, the experience of objects in time (temporal objects such as a melody) cannot, strictly speaking, be composed of instants: the ‘instant’ *just past* must somehow be *included* in ‘present’ perception, and Husserl refers to this minimal form of inclusion as ‘primary retention’, just as he refers to ‘primary protention’ to refer to the minimal form of imagination involved in anticipating the next ‘instant’. But in *Technics and Time, 2*, Stiegler undertakes to show that, if the process of primary retention cannot retain the whole field of what is perceptually given, then the retentional operation amounts to a selection within a field of possibilities, and that this (mostly unconscious) selection must operate according to criteria, and that the criteria for this selection must derive from the set of past primary retentions that have since become secondary retentions (or what we ordinarily refer to as memories), that is, from my accumulated ‘experience’.

Where, then, Derrida deconstructs the Husserlian distinction between primary and secondary retention as amounting to two modifications of non-presence that *cannot possibly* be kept separate, Stiegler radicalizes it: Husserl may dismiss (until he eventually rethinks his entire project with ‘The Origin of Geometry’) imagistic artefacts such as busts or paintings as insignificant to the question of temporal perception on the grounds they make little or no difference to his account of primary and secondary retention and protention, but

Stiegler shows that, on the contrary, the protentional aspects of these 'tertiary retentions' make it possible to gain a certain amount of *control* over the play between them. And they do so in two distinct ways: through all the processes of the transmission, stabilization and transformation of information and knowledge that are the intergenerational processes of *education and culture* (what Stiegler calls 'long circuits of transindividuation'); and through all those processes that make use of tertiary retention as a way of short-circuiting transindividuation, standardizing the retentional process in order to manipulate the protentional process (that is, processes of desire) and thereby turn consumer behaviour into something *calculable*.

The history of technical exteriorization amounts, then, to the history of tertiary retention, where this unfolds as a history of technical systems. Again, systems are never stable but only metastable: nevertheless, their systemic *tendency*, that is, their tendency to form a coherent, integrated whole in which all the parts are mutually interdependent, means that all this unfolds as the history of the *epochs* of tertiary retention, beginning with all those prehistoric tools that are retentional only in an *accidental* way (not *designed* to be memory systems), and passing through all those epochs of hypomnesic (that is, intentionally retentional) tertiary retention, from cave painting to ideographic writing, alphabetical writing, the printing press, the gramophone, radio, cinema, television and eventually digital tertiary retention. This opens the pathway that Stiegler pursues in *Technics and Time*, 3, where, through a critique and account of Simondon, he begins to describe this articulation between technical exteriorization and tertiary retention in terms of the relationship between the history of technical systems and the history of what Simondon calls psychic and collective individuation. For, if tertiary retentional innovation opens up the possibility of a succession of epochs, it does so only insofar as each of these innovations gives rise to new *practices* of these tertiary retentions, which are always practices of *care*.

This in turn leads, through a critique of the *Critique of Pure Reason*, to the argument that, if the transcendental schematism (that is, the capacity for imaginative projection to synthesize the data of intuition with the analysis of the understanding) has a tertiary retentional basis, then what Adorno and Horkheimer called the culture industry does *not* amount to a technological substitute for the schematism (since the latter has always been technological), but rather to its industrialization. What is really required, Stiegler argues in that volume, is an understanding of the specificity of the *cinematic* (and so *televisual*) epoch of tertiary retention, and the way it opens up new protentional possibilities, vast new forms of the elaboration and

control of desire, that set in motion the adoptive processes that are consumerist capitalism and the American way of life. Now, *all* ways of life may amount to such adoptive processes (a fact exposed by the ‘law-making’ of Cleisthenes), but the *relative* stability of the technical system (that is, the slow pace of its transformation) meant that the Epimethean *lag* involved in responding to systemic changes did not threaten adoption itself. When, however, the technical system begins to change so rapidly that the adoptive processes of the social systems struggle to keep up, that is, to exceed technological transformations, and when the technoscientific industrialization of the imagination effected by the culture industry begins to short-circuit the inventive capacities of the psychic apparatuses of which society is composed – at that point adoption begins to be reduced to, and to regress towards, mere adaptation.

• • •

The French edition of *Technics and Time, 3* was published in October 2001. One month earlier, however, and obviously after the completion of that work, Stiegler, along with millions of others, bore witness, watching ‘live’, to a televised ‘blockbuster’ event in which he ‘saw signs of a *precipitation towards the worst*’.⁸ The spectacular, awful events of 11 September 2001, along with the steady rise of the National Front, led him to what we can consider a second conversion of the gaze, as a result of which he would reorient his work and ‘write only in an absolutely direct, visible, legible and primary relation to questions of political economy: by politicizing phenomenological questions’.⁹ ‘So phenomenology becomes politics’, as Stanley Cavell put it more fifty years ago.¹⁰

Through this second conversion, Stiegler was able to crystallize his account of the relationship between exteriorization and individuation as his proposal for a three-stranded ‘general organology’ describing (and practising) the ‘transductive’ relations¹¹ between the psychic and somatic organs of psychic individuation, the social organizations of collective individuation and the technical organs of technical individuation. The necessity of these three strands arises from the default of origin, that is, from the advent of those beings that we ourselves are inasmuch as we are neotenic and perpetually unfinished: in our incompleteness, we find ourselves bound:

- 1 to *produce* artificial organs;
- 2 to *learn to practise* these artificial organs;

- 3 to *institute*, for the purposes of such learning and such practices, social organizations that articulate the relations between the generations, metastabilizing the forms of knowledge that *are* these practices and these cares.

The primary *analytical* concept emerging from this general organology, in this second phase of Stiegler's work, is, however, *grammatization*, taken up from Sylvain Auroux and greatly extended: while for Auroux, grammatization essentially describes the process that was necessary for speech to be broken down into the discrete elements of alphabetical writing, for Stiegler it refers to the broader analytical process by which temporal and perceptual flows of all kinds are rendered discrete and reproducible through being spatialized. Through this extension, he is able to push the origin of the grammatization process *backwards in time* to the 'arche-cinematic' reproductions of Upper Palaeolithic cave painting, and to extend this process *forwards*, not just to the grammatization of visual and auditory perception that occurred with radio and cinema, but, prior to that, to the grammatization of the manual gestures of the worker or the craftsman that are spatialized in being programmed into the machinery of the industrial revolution, and finally to what is unfolding right now: the grammatization of 'everything' made possible by the inscription of binary code into central processing units composed of silicon.

The advantage of conceiving this highly extended process of grammatization, divided as it is into successive epochs that each require specific analysis, is to make plain the connection between the Socratic account (in the *Phaedrus*) of writing as a *pharmakon* that both aids and harms memory (that is, the ability to think for oneself) and the Marxist account (in the *Grundrisse*) of industrialization, according to which:

the accumulation of knowledge and of skill, of the general productive forces of the social brain, is thus absorbed into capital, as opposed to labour, and hence appears as an attribute of capital, and more specifically of *fixed capital*, in so far as it enters into the production process as a means of production proper.¹²

In the ancient Greece to which Socrates bore witness, as in the industrial revolution to which Marx bore witness, the advent of a particular form of grammatized tertiary retention (alphabetical writing in the one case, the mechanical loom and a thousand other examples of industrial machinery in the latter) both facilitates new knowledge and threatens existing knowledge. Hence Stiegler elaborates, on the basis

of Socrates, Marx and Simondon, what is perhaps his fundamental political concept: *proletarianization*, understood as a *process of the deprivation of knowledge*, and of which Socrates is as such the first thinker. In the nineteenth century, it is work-knowledge (knowledge of how to make and do) that is proletarianized in the industrial revolution, and then, in the twentieth century, and especially in its second half, it is life-knowledge (knowledge of all the mores and manners and ways of living that make up ‘culture’) that comes to be proletarianized by the culture industry and marketing (which systematically target the formation of the youthful psychic apparatus and its attentional capacities, or, in other words, systematically interfere with intergenerational relations and the processes of knowledge-transmission they facilitate). And now, in the twenty-first century, it is rational and conceptual knowledge that finds itself increasingly absorbed into an ever more powerful computational apparatus: the successive epochs of grammatization have thus ultimately led to the progressive extension of the proletarianization described by Socrates and Marx to all areas of understanding and finally reason. In short, what Stiegler calls *general organology*, which is the thought and practice of the three strands of psychic, collective and technical individuation, conceives technics in general, and tertiary retention in particular, as a *pharmakon*, that is, as requiring both a toxicology and a therapeutics.

One other crucial element in this second, *pharmacological* phase of Stiegler’s work is his attention not just to retention but to *protection*, that is, to the way in which the noetic soul is always also making an *advance* on what it perceives, which is to say that it *projects* its objects. This is what Stiegler refers to as arche-cinema: if the montage of primary retention (edited on the basis of selection criteria derived from accumulated secondary retentions) leads to new secondary retentions that may later be ‘recalled’ as images drawn from memory (and hence is always in some way a work both of reproduction and of imagination), so too protection cannot possibly end with the ‘primary’ process that ‘anticipates’ the immediately following ‘instant’ of a temporal process. On the contrary, anticipations extend outward to all manner of (conscious or unconscious) expectations, fears, desires, hopes, beliefs, motives, reasons and *dreams* (dreams whose images are *realized* by the technical beings that are noetic souls), and it is this *protectional* process that the tertiary retentions of marketing or culture all ultimately aim to control, because it is protection that decides behaviour insofar as it is not reduced to the impulses of the drives.

It is the industrialization of protection that, in the end, makes it possible not just for the analytical operations of the understanding to be proletarianized (that is, automated), but the synthetic faculties of

reason. But if Stiegler is thereby able to explain the process by which what Foucault called ‘disciplinary societies’ give way to what Deleuze called ‘control societies’, and eventually to what Stiegler calls ‘hyper-control societies’ – by harnessing the production economy to the libidinal economy while making the latter serve the interests of the consumerist market – Stiegler’s fundamental diagnosis is that the means of doing so ultimately gives rise to *uncontrollability*: taking control of production means reducing desire to a calculable object, and this is a process that can only tend to deplete libidinal energy and hence to undermine the libidinal economy, unbind the drives and eventually to render the productive economy insolvent. It is in this perilous situation of generalized proletarianization that all manner of passages to the act inevitably proliferate.

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This narrative, involving two conversions of the gaze that correspond to a *technological phase* and an *organological and pharmacological phase* of Stiegler’s philosophy, is worth retelling, despite the overly-concise character of the recapitulation, for at least two reasons: firstly, because, as mentioned, the reception of Stiegler’s work by Anglophone philosophy has rarely ventured beyond the first three volumes of *Technics and Time* (whereas, conversely, readers coming from ‘media studies’ and related fields have tended to take up the more ‘direct, visible and legible’ works of the second phase, with less recourse to their more profound philosophical underpinnings); and, secondly, because the lectures and essays collected in this volume are something akin to a documentation of Stiegler’s *third* conversion, corresponding to what we are proposing to call his *neganthropological phase*.

So to recapitulate: what prompts Stiegler’s first conversion is an existential crisis making it absolutely necessary for him to reflect upon the composition of the interior milieu in the absence (or rather, the near absence) of the exterior milieu (that is, in the absence of the social world), leading in turn to a reflection on the process of hominization qua exteriorization, and hence on the history of the supplement that Derrida called for without undertaking, and on the noetic intermittence of the supplementary beings that we are ourselves. It is this *intermittent situation* that makes our perpetual tendency to rise or fall, to progress or regress, a *problem* that demands an *ethics*. What prompts Stiegler’s second conversion is his sense and observations of a *collective* existential crisis involving the decay of both psychic individuation processes and collective individuation processes, leading to a reflection on the doubly toxic and therapeutic character of tertiary retention in relation to desire and knowledge (where these

are imbricated by their mutually projective character, projected, that is, onto revealing and concealing screens of all kinds, beyond the finitude of what exists and towards the infinitude of what does not exist yet consists – towards ‘consistences’).¹³ It is this situation of intermittence at the level of collective individuation processes, where groups or civilizations may rise or fall, progress or regress, that demands a *politics*.

What prompts Stiegler’s third conversion – which, in addition to the texts collected here, plays out across *Automatic Society, Volume 1, Dans la disruption* and the new fourth volume of *Technics and Time* that Stiegler has interjected into his planned sequence – is his recognition that what gets going with the grammatization of work-knowledge is the Anthropocene, giving rise to an imperative to confront an ‘existential’ crisis occurring not just at the level of psychic and collective individuation processes, but on the planetary scale, at the level of the ecosystems of the biosphere and the globalized techno-economic systems of platform capitalism. This in turn demands a reconsideration of the broadest macro-economic questions and their relationship to the speed and power made possible by the digitalized, networked and algorithmic technical system. Stiegler enters into this third reinscription of his work through a kind of reckoning with anthropology, by tying it back to the question of the fate of *Anthropos* in the Anthropocene, but in no way does this amount to some kind of ‘anthropocentrism’. For if, as we have just indicated, the imbrication of desire and knowledge lies in their shared projective character, projecting towards what does not exist yet consists (such as, for instance, the ideas, which are the consistences of rational conceptualization), then this non-existence includes the idea of *Anthropos* itself, which, therefore, like all consistences, has the structure of a *promise*.

Central to this third conversion is Stiegler’s conclusion that the question of *différance* amounts to the problem of entropy and the struggle against it: Derrida maintains that *différance* names an ‘economy’ of difference and deferral, but in *Of Grammatology* he ascribes this to the history of life understood as a différential continuum, as it were. Life, as the differentiation of organs and species in order to defer the entropic tendency, is indeed, as Schrödinger argued, a process that can be understood as negentropic, or anti-entropic (the struggle against rather than the reversal). But if, as Derrida argues with respect to *Phaedrus*, anamnesis is always already conditioned by hypomnesis (or if, in other words, secondary retention is, for the intermittently noetic beings that we ourselves are, always already conditioned by tertiary retention), then this is to argue that, for such beings, what is *dead* conditions the living, which is to introduce a bifurcation

into vital *différance* that is therefore no longer *just* vital. For what is it that ultimately makes the *pharmakon* pharmacological (conjointly poisonous and curative, requiring both a toxicology and a therapeutics), if not the fact that it doubles up (and doubles down) on vital *différance*, that is, the fact that it seizes hold of the inorganic in order to *intensify and accelerate* the struggle of tendency and counter-tendency that is vital individuation qua process (lasting now some four billion years) of the unfolding of biological and ecological systems struggling to maintain their metastability against the arrow of time exposed by the second law of thermodynamics?

The transgenerational persistence of the exteriorized memory to which all technics amounts is what opens up the tertiary retentional control that makes possible the transgenerational *conservation* and *transformation* of accumulated experience, and the metastabilization of these processes of transindividuation makes possible all that we call culture, education and knowledge (as practices of care). But such processes of conservation and transformation are forms of deferral and difference of *another character* than those made possible by genetic conservation and transformation, later supported by the behavioural flexibility made possible by the evolution of cerebral organs (beginning with the first nervous tissue some 500 million years ago) that enables the lessons of individual experience to be retained (but where those lessons die with the individual). This *new différence*, beyond both genetic and nervous conservation, is what makes it possible for our psychic apparatus to be that of a knowing and desiring soul (desiring to know), and this is why Stiegler describes it as being not just negentropic, but 'neganthropic'.

Returning to the concept of entropy itself, it arose not from the pursuit of the physical understanding of the universe but from the problem of optimizing the functioning of the steam engine (minimizing its inefficiency). Initially, Sadi Carnot and Rudolf Clausius did not at all conceive the entropic forces limiting the extraction of useful energy from heat engines as probabilistic, since the atomic theory was yet to be confirmed and hence a gas was not understood to be a large collection of energetic microscopic particles propagating through random collisions. But with the concept of the engine as a localized system, it was nevertheless possible to move towards a set of equations that Boltzmann would later generalize and reconceptualize as statistical, and to the notion of entropy as the overwhelming tendency of any such localized system. And from this the obvious conclusion was drawn: insofar as the entire universe could be conceived as a closed, localized system of this kind, it, too, must be subject to these probabilistic tendencies described by the second law of thermodynamics,

frequently characterized, more or less well, as the tendency of a system to move from states of order to disorder.

In this way, a change occurred in the cosmological understanding that had reigned for centuries: a temporally static or cyclical cosmos was challenged by the thought of a physical universe that would instead be *processual*, subject to an unavoidable ‘downward trend’, as it were. The degree to which this did, indeed, amount to a challenge is exemplified by the fact that Friedrich Engels felt (in 1869) that this notion, drawn from ‘the conversion of the natural forces, for instance, heat into mechanical energy’ and postulating that ‘more heat must always be converted into other energy than can be obtained by converting other energy into heat’, was bound to lead to the ‘very absurd theory’ that there must have been a ‘first heating’.¹⁴ The latter, so he thought, implied the existence of a creator being and hence contradicted his own, ultimately metaphysical and traditional preference, as stated in *Dialectics of Nature*, for a cosmology consisting in an ‘eternally repeated succession of worlds in infinite time [...] an eternal cycle’.¹⁵

Conversely but correspondingly, for the pseudo-Nietzschean Oswald Spengler, the ‘Calculus of Probabilities’ in which the second law of thermodynamics consists, far from implying the necessity of an originitive deity, means that the ‘idea of the end of the world appears, under the veil of formulae that are no longer in their essence formulae at all’.¹⁶ In short, it implies not the necessity but the twilight of the gods:

What the myth of Götterdämmerung signified of old, the irreligious form of it, the theory of Entropy, signifies today – *world’s end as completion of an inwardly necessary evolution*.¹⁷

Hence, too, Georges Canguilhem would with hindsight take note of the deleterious effects of the importation of thermodynamic ideas (in combination with the toxic psychosomatic and social effects of industrialization) on the idea of progress.¹⁸ And Claude Lévi-Strauss will continue in this modern tradition when, in *Tristes Tropiques*, he notes that the ‘world began without man and will end without him’, that in the intervening period he has been ‘perhaps the most effective agent working towards the disintegration of the original order of things’, that he has done nothing other than ‘blithely break down billions of structures and reduce them to a state in which they are no longer capable of integration’, and that anthropology might therefore more instructively be spelled as ‘entropology’.¹⁹

Twelve years prior to *Tristes Tropiques*, Erwin Schrödinger's lectures²⁰ on life as a systemic struggle against entropy had opened up the possibility of yet again reconceptualizing the significance of entropy, even if Schrödinger's 'negentropy', it goes without saying, does not in any way imply the possibility of *vanquishing* entropy, and even if the anthropology of 'synchronic' 'structures' would pay no attention to this theoretical advance (a negligence made possible, in part, through the suppression of Leroi-Gourhan). And this was followed, in 1945, by Alfred Lotka's account of the significance of entropy for an understanding, not just of the anti-entropic struggles of biological evolution, but *also* of hominization, which he characterizes as an 'entirely new path'. Through the rapid accumulation of "'artificial" aids', including 'methods of recording' enabling an 'unceasing accumulation of knowledge and [...] technical skills', something completely original arises, a 'process that might be termed *exosomatic* evolution'.²¹

Drawing on both Schrödinger and Lotka, the economist Nicholas Georgescu-Roegen will then propose reinscribing the foundations of economics on the basis of the concepts of entropy, negentropy and the exosomatic: if biology is the science of the anti-entropic functions of the systems of life, economics is the science of the anti-entropic functions of systems that are no longer just biological, because they are technical, that is, exosomatic. Through the influence of all this work, Stiegler will be led, from 2014 onwards, to speak less frequently of the process of exteriorization and increasingly often of *exosomatization* as the process of exosomatic organogenesis (whereas biology is concerned with the processes of endosomatic organogenesis). And this will ultimately lead him to reconceptualize psychic individuation processes as those of *simple exorganisms* and collective individuation processes as those of *complex exorganisms*,²² while the great structures of a globalized (that is, anthropized) biosphere, such as those of so-called 'platform capitalism', amount to 'planetary-scale exorganisms'.

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Another historical importation of the concept of entropy will, of course, be equally significant: its migration from thermodynamics to information theory, where the term 'entropy' was borrowed, legendarily, not just because of the resemblance of its statistical formulation but also because the opacity of the concept would guarantee advantage in any debate.

Von Neumann told me, 'You should call it entropy, for two reasons. In the first place your uncertainty function has been used in statistical mechanics under that name, so it already has a name. In the second place, and more important, nobody knows what entropy really is, so in a debate you will always have the advantage'.²³

The irony of such a witticism lies in the fact that *this* use of the notion of entropy, arising from the attempt to optimize the transmission of a signal along a wire (to minimize its inefficiency), in fact depends on attributing no useful advantage to obscurity (that is, to assume the uselessness of interpretation), because the premise underlying this theory of information is that the latter can be reduced to a calculable signal for which interpretability is trivial, irrelevant or epiphenomenal. Or, more pointedly, the conception of this 'signal' relies on a double denial: *both* that the 'material support' that is the wire or the apparatus in general or the data protocol is *constitutive* (an abstraction that Simondon, too, will accept), *and* that this materiality is what opens the *possibility* of the *infinity* of knowledge but also what *prevents* this possibility from ever being *realized*, which we could describe as the fundamental *problem* of 'advantage' as such caused by the fact that knowledge is always subject to decay (into dogma and automaticity).

Just as the question of physical entropy is sometimes conceived in terms of the question of the degree of 'useful energy' that can be extracted from a thermodynamic system, the question of entropy in information theory is akin to a measure of the degree of 'useful data' that can be extracted from a communication system. But however 'useful' this way of conceiving information in terms of a calculable signal may be, the conception of 'data' it entails can only be finite, and can only be recognizable insofar as it conforms to a pre-existing format. If this fundamental notion of information theory will, in this way or that, be extended to form the basis of one or another version of cognitivism, producing a strange image of the 'cognitive faculty' as 'computational' (the cognitivist 'model'), through some kind of theoretical hybrid (or monstrosity) combining technical utilitarianism and pseudo-Kantian neurobiology, and eventually leading to what Stiegler calls the 'ideology of transhumanism', this *calculability of information* is *also* what enables this utility to be subsumed into the production function of the data economy.²⁴

The way 'information' is conceived by information technology, information science and information theory has a *performative* character: this performativity operates through the way in which 'utility', 'value' and 'advantage' come to be defined in terms of the calculable

degree to which *I know something* that *others do not* – information ‘is’, then, ‘exchange value’ as the basis of capital. Later, this will be supplemented by the possibility of gathering massive amounts of data and treating it with very powerful probability-based algorithms operating at extremely high speeds, extracting the greatest possible *performatively predictive* function from these calculable signals (where what is to be predicted is, first of all, *what will make users click*), but through a process that operates, to an extraordinary degree, by *depriving everyone else (and ultimately everyone) of every kind of knowledge and value*.

Simondon tried to reconceptualize information beyond the quantitative approaches of information theory and cybernetics, by thinking information qualitatively, and as a *tension* between the signal and the receiver, where the production of significance amounts to the *resolution* of this tension, as Yuk Hui has shown.²⁵ But Simondon *retains* from information theory the notion that information must be thought *independently of its supports* (that is, its medium, its tertiary retentional basis), making it impossible to understand wherein the *possibility* of such a tension lies. What *Stiegler* shows is that the possibility of this tension, of this ‘amplification’ that is the potentially transformational character of information conceived fundamentally as *process*, derives from the *protentional* possibility of ‘tensing’ outwards towards new meanings and unexpected information, a protentionality that arises, precisely, *from* the tertiary retentional supports that open the possibility of the process of transindividuation in general. But, in this case, this is to conceive ‘information’ in the light of Derrida’s ‘writing’: that is, as ultimately a question of the *différent* traces of a process of noetic *différance*.

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The question of ‘negentropy’, then, is not just a question of the *différance* granted by, let’s say, the way that technical thermodynamics doubles up on biological thermodynamics: it is also a question of the *différential* character of infinite knowledge (infinitely long circuits of transindividuation) insofar as knowledge is not reducible to the informational entropy of the finite calculable signal. The ‘localization’ involved in the formation of the negentropic systems of biological existence (whether these are the localized systems of the cell, the organism, the ecosystem or the biosphere) are expressions of the (biological) ‘economy’ of vital *différance*, but the localizations of noetic or negentropic *différance* are those of the default of origin: ab-original and therefore infinite processes of idiomatization of all kinds.

The fundamental *functions* required by exorganological systems, then, are those of the *economy* (broadly conceived), through which technical organs are interrelated and arranged, and those of *education* (broadly conceived), through which these technical organs are arranged with the simple exorganisms that we are ourselves: these are the knowledgeable mechanisms by which complex exorganisms maintain their coherence and their integration. Hence the functions of knowledge and reason are simply not reducible to, or ‘dissoluble into’, the ‘information’ that fuels the production function of so-called ‘algorithmic governmentality’: the latter leads to in-coherence and dis-integration and is *therefore* entropic. What is ultimately at stake in the question of the Anthropocene is to open a possible future for what governs the economic and educational systems and processes through which simple and complex exorganisms are articulated: what Stiegler calls ‘cosmological sur-realities’, which are all those consistences (formerly thought as transcendences of one kind or another) that form the limit conditions of our belief.

To put this another way, if any system involves an economy, this is because it involves the circulation, conservation and expenditure of *energy* within the *bounded* and *limited* locality of the system. But in the bioeconomic circuits of vital *différance*, this is, as in the steam engine, physical energy that is *put to work*, more or less efficiently (more or less negentropically, which is to say, more or less entropically), in the negentropic struggle to subsist, producing waste and requiring constant replenishment. In the circuits of desire that circulate within the libidinal economies of *neganthropological différance*, however, this libidinal energy possesses a strange property: in the right conditions, to expend energy by doing work (which is not opposed here to play, precisely because both are potentially transformational) can lead that energy to *increase*. And what causes that energetic increase is the way in which such work has the potential to open up prospects of a new future, as Stiegler explained in *Technics and Time, 3* with respect to cinema:

if the film is good, we come out of it less lazy, even re-invigorated, full of emotion and the desire to do something, or else infused with a new outlook on things: the cinematographic machine, taking charge of our boredom, will have transformed it into new energy, transubstantiated it, made something out of nothing [...], brought back the expectation of *something*, something that must come, that will come, and that will come to us from our own life.²⁶

Our problem, today, is that we seem to be in the midst of living through a very bad movie, one of whose beginnings was the worldwide spectacle of 9/11. It is with thoughts of this kind that Stiegler comes to draw upon Whitehead's *The Function of Reason* (1929), which, fourteen years before Schrödinger, presents an account of the cosmological and historical struggle between a 'downward' tendency and an 'upward' counter-tendency. It is through Whitehead's speculative cosmology that Stiegler can reinscribe the notion of reason, so that it can be grasped not just as a faculty in the Kantian sense, but as a function: beyond the ecosystemic subsistence characteristic of vital *différance*, reason, according to Whitehead, has the function of promoting the 'art of life' through 'the operation of theoretical realization'.²⁷ Whereas animals adapt to their environment, noetic beings 'are actively engaged in modifying their environment' and, in the case of the kind of beings that we ourselves are, 'this active attack on the environment is the most prominent fact in his existence'.²⁸

With this thought of 'realization' (upon whose 'oneiric' and hence arche-cinematic quality Stiegler will particularly insist), Whitehead describes a function that amounts to the anthropization of the milieu that will eventually give rise to the Anthropocene. But when he further characterizes this as 'the urge to transform mere existence into the good existence, and to transform the good existence into the better existence',²⁹ or when he states that reason is the 'organ of novelty, the urge beyond',³⁰ it is clear that this transformational capability of the urge towards knowledge involves an infinitude irreducible to calculable information – the infinitude this entails aims not at subsistence or existence but at consistence, at what does not exist yet consists. And when Whitehead further characterizes this 'urge' as 'a criticism of appetitions',³¹ it could not be clearer that the 'critique' this involves amounts precisely to the binding of the drives by sublimating desire, and does so insofar as desire names the infinitization of finite appetitions. Far from being the cognitive faculty by which we *understand* the world, reason, this binding-that-infinitizes, is, as Whitehead puts it, 'the disciplined counter-agency which saves the world'.³²

The neganthropological function of reason, in other words, ultimately consists in the possibility of opening *bifurcations* that would be not just probabilistic, but highly improbable. Any singular event, whether it be the 'dawn of life' (of organic or endosomatic organogenesis), or the 'dawn of man' (of organological or exosomatic organogenesis), or 'saving the world' (opening a new epoch or, when our very capacity for epochality seems threatened by the destruction of our temporalizational capacities, a new era), may be analysed in terms of probabilities, but such analyses can never measure up to

that singularity as such. It is in *this* sense that the reason required to ‘attack’ the convergence of systemic limits exceeds scientific objectivity:

To pose questions of science, politics and economics from an organological perspective is to posit in the most general way possible their indissoluble character, and to bind them transductively to a method that absolutely excludes pure scientific objectivity – it excludes any objectivity that would not be performative, that is, incomplete in Whitehead’s sense, for there is concrescence only to the extent that there is this incompleteness.³³

Concrescence, in other words, is Whitehead’s name for the transductive, open-ended (and therefore infinite) processes of individuation that Stiegler characterizes as organological insofar as they are at once psychic, collective and technical. Whitehead’s organ of novelty, the ‘urge beyond’, the ‘the urge to transform mere existence into the good existence, and to transform the good existence into the better existence’, is thus *both* an oneiric and a *technical* organ, which must therefore be married with what Leroi-Gourhan himself called the ‘urge to conquer space and time’.³⁴ If such concrescence, when it involves the noetic existence of the technical form of life, still involves localized systems, these noetic concrescences, as processes of idiomatization, are, in Stiegler’s terms, themselves localized technicizations, both anthropizations and neganthropizations:

In *noetic locality*, a neganthropic *différance* is produced by exosomatization, which locally *differs from and defers* [*diffère*] not just the law of entropy but also the law of anthropology, namely, the toxicity of the pharmacological condition, in a way that organizes and orders locality, within universal becoming but *against the current*.³⁵

The thoroughly anthropized biosphere that we now refer to as the Anthropocene has, since the industrial revolution, become our global noetic locality, but only insofar as it has not yet been totally de-noetized. The Neganthropocene, as Stiegler thinks it, is the challenge to find a performative response adequate to all the systemic challenges arising in the face of contemporary concrescence. If this threat of de-noetization implies that this remains a question (as Whitehead says) of the urge to knowledge, then the transformation of knowledge becomes the value of values on the basis of which we must massively invest in processes of de-proletarianization and re-noetization. Such processes must absolutely *not* be anti-calculative, but they must

resolutely *refuse to reduce* knowledge to the calculable information of algorithmic governmentality, transhumanist ideology and the data economy – that is, of platform capitalism.

Truth, neganthropologically reconceived, is the possibility not just of metastabilizing and transindividuating forms of knowing but of opening new bifurcatory pathways in the process of exosomatization. In inviting us, through his work and through the invocation of the Neganthropocene, to take up the necessity of this urge beyond, Stiegler is reminding us that such a bifurcation is not just a matter of sufficient information and understanding, nor even just of the faculties and functions of knowledge, or a question of desire, technical ‘solutions’ or will, let alone hope – it is also, and above all, a question of care, that is, of improbable courage. What kind of courage? Without necessarily being a question of barricades or of seizing and smashing governmental or even corporate levers, it *is*, nevertheless, a question of *revolutionary* courage, of finding a form of thought and care capable of taking the measure (and measuring up to the excessiveness) of the revolutionary situation in which, in the twenty-first century, we find ourselves: revolutionary, that is, suspensive, interruptive, fateful, unavoidable, indeterminate and requiring a conversion of our collective gaze – because on the brink.

And, in addition to the confrontation with Derrida’s *différance*, this *also* means finding and having the courage to confront, read, reread and reinterpret Heidegger: if the latter did not think entropy or negentropy, either in the thermodynamic or the informational sense (although he grasped the significance of cybernetics earlier and with greater clarity than most), what is also true is that none of the theorists of entropy (or, for that matter, of *différance*) have confronted the depths of the bifurcation that Heidegger tried to name with the word *tekhnē*. It is in *this* confrontation, and in thinking what this means for a ‘history of truth’ confronted with the possibility of ‘post-truth’, that we may just find the resources that need to be set to work in order to rethink the future of the processes of *différential* individuation that are the simple and complex exorganological beings that we ourselves may yet improbably hope to become.

Part One

**Anthropocene, Entropocene,
Neganthropocene**

1 The Anthropocene and Neganthropology

For Dan Ross, to whom I owe so much.

A new critique of anthropology, both philosophical and positive: did this not become necessary from the moment in 2004 when we saw Claude Lévi-Strauss on television admitting that he is preparing to depart a world he no longer loves? If anthropology cannot *account* for this becoming that so disheartens the anthropologist, does it not thereby lose its legitimacy, just as has occurred to those philosophies that pretend to be unaware of such questions? In other words, what becomes of anthropology in the Anthropocene era? My thesis is this: it becomes a neganthropology, and it must contribute to the advent of the Neganthropocene.

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We are *noetic* beings to the extent that we weave psychic secondary retentions on the framework of collective secondary retentions, constituted from psychic and collective preindividual funds: we individuate ourselves by exteriorizing the protentions contained within these retentional funds, hidden as ‘potentials’ that are ‘concretized’ and ‘actualized’ through being transindividuated.

This is an *organological* perspective inasmuch as arrangements of psychic and collective retentions and protentions are made possible by tertiary retentions, by artificial retentional organs the specific features of which generate protentional possibilities that are different in each case, and on the basis of which, in each new retentional epoch, transindividuation metastabilizes new attentional forms that constitute horizons of expectations, wills and desires.

This organology is itself a *pharmacology* to the extent that, generally speaking, tertiary retention both impedes and allows individuation. A new *pharmakon* carries new possibilities of psychic and collective individuation, and it thus requires ‘therapeutic’ prescriptions – in the form of magic, then religion, then politics – therapeutic prescriptions that constitute practices of care (sacrifice, ritual, worship, deliberation and debate), practices configured by the social systems within which attentional forms emerge.

This very general perspective, however, is shown in a new light with the advent of the so-called Anthropocene era. This term is used to refer to the most recent period of geophysical evolution, in which the *systemic and massively toxic character of contemporary*

organology comes to light, especially since the advent of organological industrialization, that is, since the industrial revolution, which we must understand as an *organological revolution*.

The question that arises here is exceptional and extraordinary in every respect – and this extra-ordinariness is overwhelming: how can we live *under the weight of a common protention that is potentially but massively negative on a worldwide scale*? The warnings of the Intergovernmental Panel on Climate Change (IPCC) and a thousand other current realities bring about *expectations and protentions of the worst*, that is, of collapse – not of this or that lost civilization, as Jared Diamond discusses,³⁶ but of humanity itself and in totality.

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What is the meaning of *belief* when, for example, we say that we *no longer believe* it is possible to change a situation in which the ‘human factor’ that we now refer to as ‘anthropogenic’ is, if not a cosmic element, then at least a geo-logical one, and when we *do not believe* that it is possible to change human behaviour? And *what is the relationship here between believing, wanting and individuating*? What *positivity* can we fashion from this *negative belief*, that is, this negative protention? How might we fight against it without making the mistake of denying its legitimacy, that is, without denying how serious the situation really is?

Such negative protention is inherently *performative and self-fulfilling*. If in general terms belief is a highly performative form of protention capable of nurturing a will, then non-belief is a negative performativity that brings dejection, stupefaction and neglect (of which denial is a specific and cowardly form): it is paralysis. To understand the specific question of protention, of belief, of will and of cowardice in the Anthropocene epoch, we must turn back to what constitutes the protentional possibilities of the noetic soul in general, that is, of the technical form of life, constituted by its self-exteriorization, in a way that is bound up with the performativity of belief *and therefore with will*.

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Noetic protention, in its elementary content [*teneur*], and according to Heidegger, is constituted by an arche-protention, which is that of its own end: Dasein is a *Sein-zum-Tode*. Such an arche-protention of the end (in relation to which Heidegger never confronted the questions of retentional survival and retentional finitude, and the subsequent projection of my protentions beyond the instant of my death) has, for hundreds of thousands of years, taken the form of an arche-protention

that anticipates the *continuation of the reproduction of the human species* and the *continuing pursuit of the human adventure*, that is, of Dasein. In the Anthropocene that is *our* 'Da-sein', our ex-sistence, what had hitherto been clearly, primordially and spontaneously obvious has been fundamentally disturbed and cracked, if not blocked up and covered over – and the result is the destruction of what has constituted the rational, universal and in this sense transcendental structure of what Kant called the *kingdom of ends*.

If, in Heideggerian existentialism, every protentional prospect forming the horizon to come of all Dasein to come is inscribed within the originary ordeal of abandonment, this fundamental moment of anxiety (*Angst*) remained, for it, structurally hidden, denied and forgotten – just as the knowledge of death is forgotten in and through concern (*Besorgen*), even though it thoroughly orders and controls it. Today, however, everydayness in the contemporary Anthropocene is constantly invaded by discussions, treated as banal, about the end of the human adventure and the dereliction and abandonment to which all these protentions are most likely heading – discussions that are all generally conducted in the mode of chatter (*Gerede*). In such a context, the meaning of the word *end* undergoes radical change.

It is *first and foremost* as this new epoch of negative protention constituting the banality of the Anthropocene, in which this end is increasingly perceived as *highly probable*, that *technics challenges us and puts us into question* today. It confronts us with *an unprecedented question, and this question is all the more daunting given that, at the very time this question arises, we also see the rise of the possibility and the temptation of erasing the very possibility of questioning and being put into question*.

I should mention here that the arguments along these lines that I put forward in *What Makes Life Worth Living*³⁷ in fact depart fundamentally from those of Heidegger: if Dasein is constituted by the 'possibility of questioning', if being-there exists only as being-put-in-question, then it is always organological *becoming* that puts it into question in the process of a doubly epokhal redoubling within which the therapeutic care required by the new organological situation transforms this becoming into a future, that is, transforms this *entropy* into *negentropy*.

The great organological question in the contemporary Anthropocene is protention, which simultaneously raises a question and closes off this questioning, in the sense that, faced with the radical negativity brought about by this situation, and insofar as it concerns each of us with respect to our *responsibility* and our ability to *respond to the challenge of being put into question*, the data economy has established

an *industrial and automatized production of protentions that amounts to guiding them by remote control*, or, in other words, it amounts to their *annihilation*.

The combination of the network effect, the self-production of traces, user profiling and real-time supercomputing indeed generates an industrial short-circuit and a systemic elimination of those protentions that are incalculable, subjecting all will to a form of levelling via what Thomas Berns and Antoinette Rouvroy call ‘algorithmic governmentality’³⁸ – which is the reorganization of psychopower in the era of what Jonathan Crary calls ‘24/7 capitalism’.³⁹

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All noetic activity is governed by protention: in the existential analytic this is called being-towards-death and in psychoanalysis it is called libidinal economy. When fiduciary artifices appear, such as *written forms of quantifiable exchange*, capital is constituted as a *power over protentions*, in the first place through this tertiary protention that is money.⁴⁰ In the contemporary stage of the Anthropocene, it turns out that capital has generated a negative protention that ruins every economy – existential, libidinal and capitalist. This negative protention is the protention of *nihil*, of *nothing*, and it is that completion of nihilism foreshadowed by Nietzsche at the moment German capitalism was imposing itself on Europe.

What is now called the Anthropocene corresponds to industrial capitalism, where calculation prevails as criterion of decision-making – as such, this constitutes the advent of nihilism. The confusion and disarray into which the ‘reflexive’ stage of the Anthropocene era has fallen, reflexive because purportedly ‘aware’, is nevertheless an historical outcome for which new causal and quasi-causal factors can now be identified that have hitherto received little analysis – and this is why it is correct to reject ‘geocratic’ understandings of this situation that short-circuit political analyses of that history which unfolds after the beginning of the Anthropocene event.

In addition to this historical and political perspective, however, we must add the fact that the Anthropocene event has made patently obvious something that philosophy had, in a structural way, been denying for centuries: the artefact is the mainspring of hominization, its condition and its fate. This can no longer be ignored: what Valéry, Husserl and Freud laid out between the two world wars as a new age of humanity, that is, as its pharmacological consciousness and pharmacological unconscious, has become a common awareness and unawareness that is both muddled and unhappy. Such is ill-being in the malaise of the Anthropocene today.

It is, therefore, imperative to completely rethink the noetic fact, and to do so in every field of knowledge, whether of living, doing or conceptualizing. This imperative presents itself in the contemporary Anthropocene as an extremely urgent situation vital to both politics and economics, thereby raising a question of *practical organology*, that is, of *inventive* productions, which I, along with Ars Industrialis and the Institut de recherche et d'innovation (IRI), maintain requires a total reinvention of the architecture of the World Wide Web – that technological apparatus through which the Anthropocene has, since 1993, entered into a new epoch.

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If we are to think the Anthropocene as giving rise to the devaluation of all values, then we must think it with Nietzsche: the vital task for all noetic knowledge in the Anthropocene is the transvaluation of all values, in an age when the noetic soul's calling itself into question occurs as the *completion of nihilism*. This is the *very test and ordeal of our age* – and it is the very meaning of the Anthropocene as a name for the age of capitalism's globalization. In this test, *the noetic soul is faced with the imperative of thinking thought inasmuch as it is fundamentally a question of protention, and as the arche-protention of its being called into question by its organological fate – which constitutes it while also 'destituting' it without recourse. This is something that in fact began long before either the Anthropocene or capitalism, as the pharmacological condition of thinking itself, but today there is no escape from this ordeal, which is that of nihilism.*

What does this destitution of thinking at the very heart of thinking mean? It means that *I think only insofar as there is, in my thinking, a place for what, in that which must still be thought, can and must give space for the unthinkable, that is, for becoming.* We must think the transvaluation of becoming into future by reading Nietzsche, and we must read him together with the Marx of 1857, that is, as a thinker of capitalism. Marx and Nietzsche must be read together in the service of a new critique of political economy, in a world *where economics has become a key factor, in a way that is localized and yet occurs on a scale that is colossal and indeed cosmic.* They must be read, therefore, in the service of an *ecology*: such a reading should lead to a process of *transvaluation*, so that the *economic values and moral devalorizations* to which nihilism gives rise when it becomes unbridled capitalism can be '*transvaluated*' by a *new value of values, which is to say, by negentropy.*

The theory of entropy – deriving from thermodynamics some thirty years after the advent of industrial technology and the

beginning of the *organological revolution* that lies at the origin of the Anthropocene, that is, after the steam engine⁴¹ – redefines the question of *value*, given that the *relation entropy/negentropy is really the question of life par excellence*. It is with respect to such perspectives that we must think, organologically and pharmacologically, what we should in fact call the *Entropocene* and *neganthropology*.

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The contemporary Anthropocene is a test and ordeal of thinking in all its forms (as knowledge of how to do, how to live and how to conceptualize), and as such it requires a new critique of Kantian critique, especially given that what Kant's rational cosmology *is incapable of taking into account is, precisely, the organological question*.

If the schematism originally derives from technical exteriorization and the artefactualization of the world, as I attempted to show in the third volume of *Technics and Time*,⁴² the subtitle of which was *The Time of Cinema* (and this is what constitutes the a-transcendental question of arche-cinema and of arche-cinema as a constant putting into question of spirit by itself, that is, by its concretizations and its exteriorizations – such is the *tragedy* of the *Aufklärung* as described by Adorno and Horkheimer), if the schematism originally derives from technical exteriorization and the artefactualization of the world, as I say, then this affects not just the account of the world, but of the cosmos itself.

At the dawn of philosophy, the *kosmos* is thought as identity and *equilibrium* (in a way that, however, was not the case for Pre-Socratic philosophy). In this opposition between equilibrium of ontological origin and the disequilibrium of corruptible beings, technics constitutes the organological condition and is related to the sublunary as the world of contingency, as 'that which can be otherwise that it is' (*to endekhomenon allōs ekhein*). As such, it finds itself excluded from thought.

Such a position, however, is no longer tenable in the Anthropocene, and as such it constitutes an unprecedented epistemic crisis: the advent of the thermodynamic *machine*, which is the *Ereignis* of the industrial revolution and of its *Gestell*, and which showed the human world to be *fundamentally* characterized by *change and disruption* [*perturbation*], inscribes 'processuality', the irreversibility of becoming and the instability of equilibrium in which all this consists, at the core of physics itself.

The thermodynamic machine, which raises, in *physics*, the new and specific problem of the dissipation of energy, is also an industrial technical object that fundamentally disrupts *social* organizations,

with the result that it radically alters ‘the understanding that there-being has of its being’. This technical object, of which Watt’s flyball governor will prove a key element at the centre of the cybernetic conception – this technical object, as essentially *combustive*, introduces, on both the astrophysical plane (which replaces mythological cosmology) and on the plane of human ecology, the *question of fire and of its pharmacology*.

The question of fire – that is, of combustion – is thus inscribed in the perspectives of both physics and anthropological ecology, at the heart of a renewed thought of cosmos *qua* cosmos: the Anthropocene epoch can appear as such only starting from the moment when the question of the cosmos is itself grasped as that of combustion, in both astrophysics and thermodynamics – but, therefore, also in relation to this exceptional *pharmakon* that is domesticated fire, fire as that artifice par excellence delivered to mortals by Prometheus.

As a physical problem, the techno-logical conquest of fire (which is the *Ereignis* of *Gestell*) puts *anthropogenesis*, that is, *organological organogenesis*, at the heart of what Alfred North Whitehead called *concrecence*,⁴³ and does so as the *local technicization of the cosmos*. This may be only a local technicization, but it leads to *conceiving the cosmos in totality on the basis of this position* and on the basis of this *local opening of the question of fire* as that *pharmakon* of which we must *take care*. And here, the question of the *energy* (and *energeia*) that fire (which is also light) contains – after the organological and epistemological revolution that occurs when Schrödinger rethinks thermodynamics – constitutes the *matrix of the thought of life and of information*, and does so as the *play of entropy and negentropy*.

Establishing the *question* of entropy and negentropy for human beings as the *crucial problem* of daily human life and of life in general, and ultimately of the universe in totality, *technics* constitutes the matrix of all thinking of *oikos*, of habitat and of law. At the very moment when Erwin Schrödinger was giving his lectures in Dublin, Georges Canguilhem was arguing that the noetic soul is a technical form of life, and that it *requires new conditions of fidelity in order to overcome the shocks of infidelity* caused by what I myself refer to as the *doubly epokhal redoubling*.

The infidelity of the technical milieu: this is what the organological and pharmacological beings who are *noetic* individuals encounter in the form of *epokhal technological shock*. This shock and this infidelity are essentially what Simondon referred to as ‘shifting phase’ [*déphasage*] in order to describe the dynamic principle of individuation.

We should recall here what Canguilhem posits in principle concerning the more-than-biological meaning of *epistēmē*: *knowledge of life is a specific form of life conceived not just as biological but as the vital knowledge of milieus, systems and processes of individuation – where knowledge is the future of life. Here, the concrescence of the cosmos generates processes of individuation in which entropic and negentropic tendencies play out differently in each case. We must relate this organo-logical function of knowledge in the technical form of life to Simondon’s account of the knowledge of individuation: for Simondon, to know individuation is to individuate, that is, it is to already no longer know because it is to undergo a phase shift, to become out-of-phase.*

Questions of life and negentropy may derive from Darwin and Schrödinger, but they must be redefined in relation to the organological context, given that:

- 1 natural selection gives way to artificial selection; and
- 2 the passage from the organic to the organological displaces the play of entropy and negentropy.⁴⁴

Technics is an *accentuation of negentropy*, since it brings *increased differentiation*. But it is equally true that technics is an *acceleration of entropy*, not just because it is a process of combustion and of the dissipation of energy, but because *industrial standardization* seems to be leading the contemporary Anthropocene to the possibility of the destruction of life qua the burgeoning and proliferation of difference – a destruction of biodiversity, cultural diversity and the singularity of both psychic individuations and collective individuations.

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With the concept of process, Whitehead moves beyond seeing natural phenomena and cultural phenomena in *oppositional* terms, and this is also the very meaning of the Anthropocene: anthropic activity has become a geophysical factor. In Whitehead, cosmology is no longer a matter of the order of the spheres, but a processual dynamic of nested spirals that materialize regimes of speed. And here, thinking would be that *infinite speed* of the power to rupture, to effect breaks, that is, to cause bifurcations by disautomatizing repetitive regularities and by changing the rules – power, which is knowledge, and which Whitehead also called history.

This power to change the rules, however, also establishes a risk of intersystemic conflict (which von Bertalanffy studied in his *General System Theory*⁴⁵), which inscribes the pharmacological question at

the centre of cosmology, and does so as the anthropo-technical, biospherical and local consequence of the initial combustion and its universal thermodynamic law. This is why Whitehead could write that ‘the major advances in civilization are processes that all but wreck the societies in which they occur’.⁴⁶ To change the rules is to go faster than light insofar as the latter has become, as the speed of digital automatons, the horizon of the calculation industry: it is to go *infinitely* fast – at the *speed of desire*, that is, of that *idealization via which neganthropy passes onto the plane of consistences*.

This raises the question of those laws of the universe that constitute the field of physics, and that form the set of rules of a game we cannot change – but that we *can* localize, that we can play by interpreting it in a localized way, that is, by liberating potentials for individuation through the artefactual organization of inorganic sidereal play – this is what occurs, for instance, with nanophysics, emerging as it does from quantum technology.

Above all, technics consists in the *organization of inorganic matter*, leading in return to the *organological reorganization of cerebral organic matter*, which in *its* turn organologically modifies the play of the somatic organs, giving rise to a new form of life, that is, a new form of negentropy, which is nevertheless also, as technics, an accelerator of entropy on every cosmic level – it is this two-sidedness that characterizes the *pharmakon*: toxic means entropic.

An example of a nanotechnological organ is the scanning tunnelling microscope, which is itself a *computer*. This arrangement between the cerebral organ and the quantum scale of hyper-matter is a stage of concrecence that here also amounts to a process of concretization in the larger Simondonian sense, operating on all cosmic planes at once: sidereal, vital and psychosocial, that is, technical. This localization is a striking example of anthropotechnical retroaction on the play of the biospherical whole, within which it spreads and generalizes by locally generating this extra-ordinary stage of concrecence that is the Anthropocene.

While respecting the laws of physics, technics locally transforms the cosmic order in unpredictable ways. Hence the concretization of the technical individual that is the machine, whose functioning is not soluble into the laws of physics, tends to form associated technogeographical milieus. According to Simondon, this tendency implies the need for a mechanology, but I believe it can more fruitfully be understood in terms of an organology, given that mechanology does not allow us to think either pharmacology or the links between psychic, technical and collective individuation.

Process, concrescence, disturbances, infidelities of milieus and of every metastable equilibrium (that is, metastable disequilibrium) all form what, in our age, presents itself to us as what we are causing *within* ourselves, *around* us and *between* us. It is what we are causing as the projection of a becoming that our organological and pharmacological condition no longer allows us to succeed in trans-forming into a future, that is, as the play between the processes of psychic, technical and collective (that is, social) individuation, where the latter form the three dimensions through which and within which our existence always occurs, bound by their mutual organological condition.

With the control of protentions by a capitalism that has become structurally entropic, the contemporary Anthropocene seems to condemn psychic and collective individuation to being wiped out by a technical individuation that has become subject to a self-destructive economy, given that it destroys those social milieus without which the technical milieu inevitably becomes a negative externality that in turn destroys the physical milieus of the biosphere.

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The organological approach is constitutively situated in time in the sense that *its object is becoming*, and its question is the *transformation of becoming into future*, which means that what is at issue is the transformation of entropy into negentropy. It is a practical approach whereby becoming, for which there can be no complete theory, no ontology, requires inventiveness – it requires an ‘*inventivity*’ that would be the pharmacological and organological counterpart of what Whitehead called *creativity*. Within such an approach, we must begin by describing the situation in which we now find ourselves organologically and pharmacologically immersed, and on the basis of which we can accede – as Dasein – to the historicity (*Geschichtlichkeit*) of a being-organologically-there that is a being-pharmacologically-there.

But here, historicity is not conceived as in Heidegger, namely, ontologically, but as in Simondon, that is, as an ontogenesis, but with the corollary that this is understood, contrary to Simondon, as an artefactual ontogenesis. According to such an approach, our situation at the end of November 2014, aside from the widespread recognition of the *inherently pharmacological dimension of development*, is marked by the new and unprecedented questions presented to us by *digital* technology.

Digital technology, which completely reconfigures the globalized industrial infrastructure, is the unavoidable path we must follow, and we cannot escape the question of a pharmacology and a therapeutics that places the digital becoming of the world at the very centre of

what must be decided, as the *organon* of this decision and/or of this indecision. This is why I, along with Ars Industrialis and IRI, and with the Digital Studies Network, have implemented our organological project from the perspective of what we call *digital studies*. Digital studies posits in principle that everything begins with exteriorization, and in particular with the digits – that is, with the foot and the hand.⁴⁷

Digital studies refers, firstly, to the study of the materiality and/or the corporeality of knowledge, that is, of the incorporation and materialization of noetic fluxes. Like writing, like the steam engine, the programmable loom and machine tools, like analogue devices, like all of these, the computer – especially when it becomes what Michel Volle calls a ‘ubiquitous programmable automaton’,⁴⁸ that is, the terminal of a network – is what causes a change in the relationships between knowledge and technics or knowledge and technology, and, through these relationships, a change in knowledge itself in all its forms. In this way, a new organological epoch of knowledge is constituted, amounting to a new *epistēmē* that calls for specific concepts.

The reticular computer raises anew all those questions first posed by Socrates in relation to the question of the *pharmakon*, multiplying them by a factor of four million, which is the difference between, on the one hand, the speed of nerve impulses that circulate at 50 metres per second along the nerves that are the reticulation of our bodies,⁴⁹ and, on the other hand, the speed of information on fibre optic networks running along the bottom of the Atlantic Ocean, where information circulates via specialized connections serving high frequency trading at two hundred million metres per second.⁵⁰

These questions put back into play the entire relationship between technics, knowledge, politics and economics (that is, powers): the status of the steam engine, just like that of the computer, is at once epistemic, epistemological, political and economic, and we cannot approach either of them without considering all these dimensions. In fact, the *overtaking* of the speed of nervous transmission by the speed of fibre optics, which is also the overtaking of the speed of reason by an understanding that has become automatic, brings the problem of proletarianization, which every *pharmakon* always involves, to that ultimate point that is completed nihilism. And, as such, it demands a reconsideration of the organological (arche-cinematographic) conditions of the Kantian schematism.

To pose questions of science, politics and economics from an organological perspective is to posit in the most general way possible their indissoluble character, and to bind them transductively to a method that absolutely excludes pure scientific objectivity – it excludes any objectivity that would not be performative, that is, incomplete in

Whitehead's sense, for there is concrescence only to the extent that there is this incompleteness. And it is this incompleteness that also constitutes the process of individuation in Simondon, for whom the question of the scheme and the category arises from this processual perspective.

To in principle posit the incompleteness of the cosmos, and thereby inscribe a performative possibility that would exceed any scientific objectivity, obviously does not rule out all scientific objectification and objectivity. Rather, it means that the cosmic process contains something that cannot be objectified, and that the cosmos is not reducible to physics as a stable set of laws – in this case because physics is organological, that is, because it leads to the introduction, into the cosmos, of the *pharmakon*, that is, the incompleteness in which it radically consists – and in this sense knowledge of life is a struggle not just for life but for existence, wherein to know individuation consists in individuating and therefore in never quite knowing it entirely (this thesis is not Whitehead's but mine).

Scientific objectivity is always related to a particular organological state given at that time, and also to a given locality: organology has an irreducibly local dimension. This point of view suggests that there are indeed grounds on which one could contest the term 'general organology', as Ricardo Baldissoni has done – except and unless one gives to words such as *genre*, *generalis* and *generality* a new meaning, whereby the word *general* would mean: *transindividuated on the three planes of organological becoming*.

The singularity of the Anthropocene as an organological epoch lies in the fact it has generated the organological question itself, hence in the fact it is constituted by its own recognition, a recognition bringing with it something new: its negative protention and the necessity of overcoming itself. The *question* of the Anthropocene is how to *exit* from the Anthropocene qua toxic period in order to enter into a new epoch that we are calling the Neganthropocene, as a curative, care-full epoch. In practical terms this means that, *on the economic plane, value accumulation should be undertaken exclusively with a view to neganthropic investments*.

The question of the Anthropocene, which, therefore, has the structure of a *promise*, emerges at the moment when, on the other hand, *full and general automation* is being set in place as one outcome of the *industry of reticular digital traces*. This reticulation industry must be thought as the chance for a new epoch of work, where the epoch of employment will be brought to an end, and where this will occur through a 'transvaluation' of value, wherein, as Marx put it: 'labour time ceases and must cease to be [the] measure [of work or labour], and

hence exchange value [must cease to be the measure] of use value'.⁵¹ In this situation, the *value of value becomes neganthropy*: what remains to be accomplished is thus the passage to the Neganthropocene – and in saying this I am continuing a discussion with Maurizio Lazzarato that I opened in *Automatic Society, Volume 1*.

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It was Socrates who first posed the question of the trace, of its interiorization and exteriorization. This was the first formulation of the pharmacological question: the question of the trace as the threat of proletarianization inherent in all knowledge – given that all knowledge is exteriorized. It is on this very basis that we must analyse today's globalized industry of reticulated traces, the organ of which is the *reticulated computer*, operating on the basis of the network effect, the self- and auto-generation of traces, and the real time calculation applied to these traces on a planetary scale – technologies that produce what Berns and Rouvroy call 'algorithmic governmentality'.

The algorithmic governmentality of 24/7 capitalism leads to the formation of artificial crowds (in Freud's sense, commenting on *Le Bon*), this being the origin of 'crowd sourcing', that is, of the data economy: such is the contemporary reality of the Anthropocene qua digital stage of grammatization, leading psychic individuals throughout the entire world to grammatize their own behaviour by interacting with computer systems operating in real time.

These systems produce an automatic performativity that channels, diverts and short-circuits individual and collective protentions: by outstripping and overtaking the noetic capacities of individuation, and doing so precisely insofar as the latter are protentional capacities (that is, *oneiric* capacities); and, at the same time, by short-circuiting the collective production of circuits of transindividuation.

This outstripping and overtaking of every form of noesis operates via the incitement, by remote control, of protentions, protentions that are continuously being redefined and are always already erased by new protentions that prove ever more dis-integrated, that is, that show themselves to be '*dividuals*', in Guattari's sense. This short-circuiting of psychic and collective protentions, replaced by automatically generated protentions, impedes dreaming, wanting, reflecting and deciding, that is, the collective realization of dreams. And these obstructions are ultimately a *systemic impediment to thinking*, which then constitutes the basis of algorithmic governmentality as the power structure of computationally integrated 24/7 capitalism.

The analyses by Jonathan Crary and by Berns and Rouvroy of the computationalization of behaviour generated by the digital doubles of

user profiling should be combined with Alan Greenspan's reflections on the effects of automating financial transactions, enabling the formation of a system also referred to as the 'financial industry', where we find both subprime mortgages and speculative technologies such as credit default swaps and high frequency trading, all 'founded' on increasing speed.⁵²

Berns and Rouvroy do not denounce the existence of digital doubles as such. Their conclusion, on the contrary, is that 'our statistical double is too detached from us'.⁵³ This detachment arises because the data industry, as the automated production and exploitation of traces, *dispossesses* us of the possibility of *interpreting* our retentions and protentions – both psychic and collective.

To change this situation, this state of fact, and open up the possibility for a new state of law, which Antoinette Rouvroy calls for, we must invent an organology based on the potentials contained in the digital technical system – even though currently this system does indeed give every appearance of being a giant technical individual, a digital Leviathan that exerts its power over the entire Earth, and does so *through its ability to continually outstrip and overtake everything* on behalf of a decadent, uncultivated and self-destructive oligarchy – because it is an *absolutely* venal oligarchy, that is, *perfectly* nihilistic.

This contemporary Leviathan is global, and it is the result of the reticular and interactive traceability of 24/7 capitalism. Most people now have a general awareness of this situation, and thus this traceability does not operate 'behind the back of consciousness', as Hegel said about the phenomenology of spirit (of its epiphany as exteriorization), but rather by outstripping and overtaking the protentions that produce this consciousness, that is, by proposing and substituting prefabricated protentions – and these protentions are prefabricated even if they are also 'individualized' or 'personalized'. All this represents a radical and unprecedented rupture with Husserl's description of the temporal activity of noetic consciousness.

The latter is composed of primary retentions that consciousness selects (without being aware of doing so) at the time the experience occurs, selections made on the basis of the secondary retentions this consciousness contains. Secondary retentions thereby constitute the criteria for these selections. The primary retentions resulting from this selection 'engramme' individually lived experience, and contribute to the accumulation of past experience – by in their turn becoming secondary retentions. The play between primary and secondary retentions generates protentions that are themselves primary and secondary (though Husserl did not make this distinction). Primary protentions are tied to the object of lived experience, so that through habit,

reasoning, physiological automatisms, or through the knowledge that the perceiving subject accumulates about the object of perception, such ‘primarily retained’ traits result in ‘primarily protained’ traits, that is, expected and anticipated traits – whether consciously or otherwise.

These primary and secondary retentions and protentions constitute mnesic traces, which, like the ‘neurones’ in Freud’s *Project for a Scientific Psychology*, are ‘charged’ with and ‘tend’ towards protentions, through circuits and facilitations formed between these mnesic traces that Freud called ‘contact barriers’, as potentials for action and as *expectations that constitute the lived experience of these potentials*.⁵⁴ This play of retentional and protentional mnesic traces is conditioned and overdetermined by the play of those hypomnesic traces formed by tertiary retention.

In the case of *digital and reticulated* tertiary retention, that is, arrangements of psychic retentions and protentions via automatisms whose speed approaches that of light, the retentional selections through which experience occurs as the production of primary retentions and protentions are overtaken by prefabricated tertiary retentions and protentions that are ‘tailored’ through ‘user profiling’ and ‘auto-completion’ technologies, and through all the possibilities afforded by real-time processing and its associated network effects – and augmented by this performativity.

Given this differential of four million between the speed of nerves and that of fibre optics, such considerations call for an *organology and a pharmacology of speed and will*. For it is *will in its most basic forms* that is thereby *emptied of all content and overtaken by traceability*.

We must elaborate an *organology of will*, and not just of desire – of will [*volition*] as including every kind of production of motives, of which willpower [*volonté*] qua deliberate and conscious production is merely one case among others – which does not mean that we should dilute the specificity of each of them, quite the contrary.

We must work towards an organology of will the goal of which would be to pose the challenges of the Anthropocene and the Neganthropocene by, precisely, rethinking practical questions in relation to this organology. This is necessary because the hyper-matter in which this organological matter consists enables control to be taken of the material processes that condition will and willpower, and thereby short-circuits them in every dimension, replacing them with automatized protentions.

• • •

When a noetic individual undergoes a temporal experience in which he or she selects primary retentions on the basis of his or her secondary retentions, this individual at the same time, and in return,⁵⁵ *interprets* these secondary retentions inasmuch as they form ensembles.

Such ensembles are charged with protentions arising from previous experiences. Some of these protentions are transindividuated and transformed into rules held in common, that is, into habits and conventions of every kind, metastabilized between the psychic individual and the collective individuals associated with these experiences (a convention being what is convenient to, suitable for, a plurality of individuals: what makes them *come together*). Some of these protentions, however, remain awaiting transindividuation, that is, they await expressions and inscriptions that pursue existing circuits of transindividuation further.

For a psychic individual to interpret, during a present experience, the ensembles of secondary retentions that constitute his or her past experience is to make actual the protentions that these ensembles contain as potential.⁵⁶ By short-circuiting the protentional projections of psychic and collective noetic individuals, by phagocytically absorbing the milieus associated with them, and by sterilizing the circuits of transindividuation that are woven between them through their individual and collective experiences, by doing all this, algorithmic governmentality annihilates the traumatypical potentials of any protentions that might bear the possibility of neganthropological upheavals. Such is computational nihilism in the contemporary Anthropocene.

When noetic experience is fulfilled in actuality and ‘fully’ (in the plenitude of actuality that constitutes what Aristotle called *entelechy*), it constitutes a support for the expression of traumatypes that participate in the inscription of noetic singularity into circuits of transindividuation, circuits through which knowledge is woven as the accumulation of previous experience insofar as it is original and yet recognized and identified. As such, noetic experience is experience that is neganthropically bifurcating.

It is a question, therefore, of how to re-establish a true process of transindividuation with digital, reticulated tertiary retentions, and to bring about a digital age of psychic and collective individuation. The challenge is to generate tertiary retentions with all the polysemic and plurivocal thickness of which the hypomnesic trace is capable, reflecting the hermeneutic play of the improbable and of the singularity involved in the protentions that are woven between psychic and collective retentions.

To do this, we must build and implement systems dedicated to the individual and collective interpretation of traces – including by

using automated systems that enable analytical transformations to be optimized, and new materials to be supplied for synthetic activity. This is what we are working towards, organologically, with the goal of rebuilding the architecture of the World Wide Web, and as a way of responding to the call issued by Tim Berners-Lee in London last September with his initiative entitled 'The Web We Want'. As for us, what we want is a neganthropic web, and we want it so that we can inaugurate the Neganthropocene

2 Escaping the Anthropocene

1 Automation and negentropy

The propositions at the heart of this paper are founded on the conclusions of my recent work entitled *Automatic Society*, a book concerned with the issues of full and general automation that have accompanied the advent of the digital age.⁵⁷ In it I argue that algorithmic automation is leading to the decline of wage labour and employment, and hence to the imminent disappearance of the Keynesian model of redistributing productivity gains, a model that has until now been the basis of the macro-economic system's ability to remain solvent.

After the 'great transformation' that Karl Polanyi described in 1944,⁵⁸ which gave rise to what we now call the Anthropocene, there is now taking place what amounts to an *immense* transformation, a transformation that presents us with an alternative:

- either we continue being led in the direction of hyper-proletarianization and a generalized form of automatic piloting that will engender both structural insolvency and a vertiginous increase in entropy;
- or we lead ourselves *out* of the process of generalized proletarianization into which we have been placed by 250 years of industrial capitalism – which requires negentropic capabilities to be widely developed on a massive scale, through a noetic politics of reticulation that places automatons, automation systems of every kind, into the service of individual and collective capacities for dis-automatization, that is, into the service of the *production of negentropic bifurcations*.

The immensity of the transformation currently underway is due both to the speed of its effects and to the fact that these effects operate on a global scale. So-called 'big data' is a key example of this immense transformation, which is leading globalized consumerism to *liquidate all forms of knowledge (savoir vivre, savoir faire and savoir conceptualiser, knowledge of how to live, do and think)*.

The Anthropocene is an 'Entropocene', that is, a period in which entropy is produced on a massive scale, thanks precisely to the fact that what has been liquidated and automated is knowledge, *so that in fact it is no longer knowledge at all*, but rather a set of *closed systems*, that is, *entropic systems*. Knowledge is an open system: it always

includes a capacity for dis-automatization that produces negentropy. When Chris Anderson announced that the era of ‘big data’, or what he calls the ‘data deluge’, would lead to the ‘end of theory’,⁵⁹ he made a serious mistake, given that he ignored the fact that to close an open system leads in a systemic way to its disappearance.

Given that it is founded on proletarianization and the destruction of knowledge, the model of redistributing productivity gains through employment is itself doomed. Another model of redistribution must be conceived and implemented if we are to ensure macro-economic solvency in the age of digital automation. The *criteria* for redistribution that must now be adopted can no longer be founded on the productivity of labour. Productivity is today a question of machines, and today’s digital machine no longer has any need for either work or employment.

Manual *work*, which produces negentropy and knowledge – which Hegel discussed in terms of *Knecht* – was, in the nineteenth century, progressively replaced by proletarianized labour or employment, that is, by a proletariat forced to submit to a machinery that was entropic not just because of its consumption of fossil fuels, but because of its standardization of operating sequences and the resultant loss of knowledge on the side of the employee. This loss of knowledge has today become so widespread that it has reached as far as Alan Greenspan, as I have shown in *Automatic Society, Volume 1*, and as he himself stated on October 23, 2008.⁶⁰

The Anthropocene is unsustainable: it is a massive and high-speed process of destruction operating on a planetary scale, and its current direction must be reversed. The question and challenge of the Anthropocene is therefore the ‘Neganthropocene’, that is, to find a pathway that will enable us to escape from this impasse of cosmic dimensions – which requires the elaboration of a new speculative cosmology in the wake of Whitehead.

New criteria, as I said, must be implemented in order to organize redistribution in the economy of the Neganthropocene, and these new criteria must be founded on the capacity for dis-automatization that it is up to us to resuscitate. This necessarily involves a resurrection of what Amartya Sen calls capabilities, which he places at the foundation of human development – that is, of the *individuation* of humankind.

2 Knowledge, freedom and agency

Amartya Sen relates ‘capability’ to the development of freedom, which he defines as always being both individual and collective: ‘we have to see individual freedom as a social commitment’.⁶¹ In this

way, Sen remains faithful to both Kantian and Socratic perspectives. Capability constitutes the basis of economic dynamism and development, and it does so as freedom: ‘Expansion of freedom is viewed, in this approach, both as the primary end and as the principal means of development’.⁶² Freedom, in Sen’s definition, is therefore a form of agency: the power to act.

Sen’s comparative example of the incapacitating effects of consumerism (that is, in his terms, of the indicators of affluence) is well-known: the black residents of Harlem have a lower life expectancy than the people of Bangladesh, and this is precisely a question of their ‘agency’.

Freedom, here, is a question of knowledge insofar as it is a capability that is always both individual and collective – and this means: individuated both psychically and collectively. It was on this basis that Sen devised the human development index in order to form a contrast with the economic growth index.

I would like to extend Sen’s propositions by means of a different analysis, one that leads to other questions. In particular, consideration must be given to the question of what relations psychic and collective individuals can forge with automatons, in order to achieve individual and collective bifurcations within an industrial and economic system that, in becoming massively automated, tends also to become closed.

The Anthropocene, insofar as it is an ‘Entropocene’, amounts to accomplished nihilism: it produces an unsustainable levelling of all values that requires a leap into a ‘transvaluation’ capable of giving rise to a ‘general economy’ in Georges Bataille’s sense, whose work I have elsewhere tried to show involves a reconsideration of libidinal economy. The movement I am describing here is no doubt not a transvaluation in a strict Nietzschean sense. Rather, it is an invitation to reread Nietzsche with respect to questions of disorder and order that in the following will be understood in terms of becoming and future.

3 Becoming and future

If there is to be a future [*avenir*], and not just a becoming [*devenir*], the value of tomorrow will lie in the constitutive negentropy of the economy-to-come of the Neganthropocene. For such an economy, the practical and functional differentiation between becoming and future must form its criteria of evaluation – only in so doing will it be possible to overcome the systemic entropy in which the Anthropocene consists. This economy requires a shift from anthropology to neganthropology, where the latter is founded on what I call general organology and on a pharmacology: the *pharmakon* is the artefact and as such

the condition of hominization, that is, an organogenesis of artefactual organs and organizations, but it always produces both entropy and negentropy, and hence it is always also a threat to hominization.

The problem raised by such a perspective on the future is to know how to *evaluate* or *measure* negentropy. Referred to as negative entropy by Erwin Schrödinger and as anti-entropy by Francis Bailly and Giuseppe Longo, negentropy is always defined in relation to an observer (see the work of Henri Atlan⁶³ and of Edgar Morin⁶⁴) – that is, it is always described in relation to a *locality that it as such produces*, and that it *differentiates* within a more or less homogeneous space (and this is why a neganthropology is always also a geography). What appears entropic from one angle is negentropic from another angle.

Knowledge – as *savoir faire* (that is, knowledge of what to do so that *I do not myself collapse* and am not led into chaos), as *savoir vivre* (that is, knowledge that *enriches and individuates the social organization in which I live without destroying it*), and as conceptual knowledge (that is, *knowledge the inheritance of which occurs only by passing through its transformation, and which is transformed only by being revived* through a process of what Socrates called anamnesis, a process that, in the West, structurally exceeds its locality) – knowledge, in all these forms, is *always a way of collectively defining what is negentropic in this or that field of human existence*.

The *inhuman* refers to a way of denying the negentropic possibilities of the human, that is, of denying its noetic freedom, and, as a result, its *agency*. What Sen describes as freedom and capability must be conceived from this cosmic perspective, and related to Alfred North Whitehead's 'speculative cosmology', as constituting a negentropic potentiality – as the potential for *openness* of a *localized* system, which, for that being we refer to as 'human', may always once again become closed. Or, in Whitehead's terms, human beings may always relapse, decay into simpler forms, that is, become inhuman.⁶⁵

This is so only because the anthropological is both hyperentropic and negentropic to the second degree: *Anthropos* is organological, that is, pharmacological, or, as Jean-Pierre Vernant put it, constitutively ambiguous.

4 Anthropology as entropology according to Lévi-Strauss and beyond

In addition to being fundamentally local, an open, negentropic system is characterized by its *relative* sustainability – or in other words, by its finitude. What is negentropic – whether idiom, tool, institution, market, desire and so on – is always in the course of its inevitable decay.

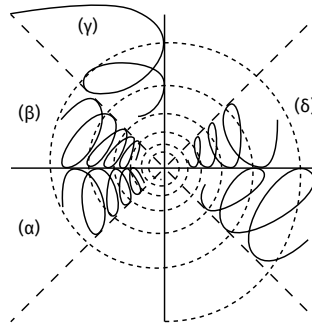


Figure 1

What I call an idiotext (Figure 1), as I attempted to define it in the final part of my thesis (which has not yet been published), is an open locality taken up within another, greater locality, or within what I describe as nested spirals as they co-produce a process of collective individuation by psychically individuating themselves. This is not without an echo in the questions posed by Edgar Morin in *The Nature of Nature*.⁶⁶ But Morin, like Atlan, overlooks the essential, namely, the organological dimension (that is, the technical and artificial dimension) of the negentropy characteristic of *Anthropos*, which means that it is also pharmacological, that is, both entropic and negentropic, and hence requires continual arbitration – negotiations that are *operations of knowledge as therapies and therapeutics*.

In an idiotext tendencies compose, tendencies that are highly pharmacological, that is, both entropic and negentropic, and, in this way, they constitute a dynamic wherein figures or motives emerge that are protentions, that is, differences that separate future from becoming and thereby allow this separation to be perpetuated. These are the motives and figures through which knowledge is woven as the circuits of transindividuation that form both within a generation and between the generations.

Since the early years of the twenty-first century, at IRCAM, that is, as a result of my journey through musicology, I have presented this composition of tendencies as what results from negotiation between psychosomatic organisms (psychic individuals), artificial organs (technical individuals) and social organizations (collective individuations). It is through the complexity of this negotiation that the principles of general organology are formalized, as a kind of pharmacological drama, that is, as the constantly renewed and reposed problem of the decay of negentropic conquests into entropic waste.

This point of view is the complete opposite of the conclusion reached by Claude Lévi-Strauss at the end of *Tristes Tropiques*, when, having recalled that ‘the world began without man and will end without him’, and that man works towards ‘the disintegration of the original order of things and precipitates a powerful organization of matter towards ever greater inertia, an inertia that one day will be final’,⁶⁷ he adds that

From the time when he first began to breathe and eat, up to the invention of atomic and thermonuclear devices, by way of the discovery of fire – and except when he has been engaged in self-reproduction – man has *done nothing other* than blithely break down billions of structures and reduce them to a state in which they are no longer capable of integration.⁶⁸

Hence Lévi-Strauss poses with rare radicality the question of *becoming without being*, that is, of the *inevitably ephemeral character* of the cosmos in totality, as well as of the localities that form therein through negentropic processes that are themselves always factors of entropic accelerations.

If we were to take this *profoundly nihilistic* statement by Lévi-Strauss literally (when, for example, he writes that ‘man has *done nothing other* than blithely break down billions of structures and reduce them to a state in which they are no longer capable of integration’), we would be forced to assume that very little time separates us from the ‘end times’. We would be forced to reduce this time to nothing, to *annihilate* it, and to discount negentropy on the grounds of its being *ephemeral*: we would have to *dissolve the future into becoming*, to assess it as null and void [*non avenu*], as never coming, that is, as *having ultimately never happened*, the outcome of having no future – as becoming without future. And we would be forced to conclude that what is ephemeral, because it *is* ephemeral, is merely *nothing*.

This is what the anthropologist literally says. I define myself as a neganthropologist. And I have two objections to Lévi-Strauss:

- on the one hand, that the question of reason, understood as a *quasi-causal power* (in the *Deleuzian sense*) to bifurcate, that is, to produce, in the jumble of facts, a necessary order forming a law, is always the question of being ‘worthy of what happens to us’,⁶⁹ which is another way of describing the function of reason as defined by Whitehead, namely as what makes a life a good life, and what makes a good life a

better life,⁷⁰ that is, a struggle against static survival, which is nothing other than the entropic tendency of all life;

- on the other hand, that Lévi-Strauss's bitter and disillusioned sophistry seriously neglects two points:
 - 1 first, life in general, as 'negative entropy', that is, as negentropy, is always produced *from* entropy, and invariably leads back there: it is a detour – as was said by Freud in *Beyond the Pleasure Principle* and by Blanchot in *The Infinite Conversation*;
 - 2 second, *technical* life is an *amplified and hyperbolic form of negentropy*, that is, of an organization that is not just organic but *organological*, but which produces an *entropy that is equally hyperbolic*, and which, like living things, returns to it, but does so by *accelerating the speed of the differentiations and indifferenciations* in which this detour consists, speed here constituting, then, a locally cosmic factor.

This *detour* in which technical life consists is *desire as the power to infinitize*.

It is misleading to give the impression, as Lévi-Strauss does here, that man has an *entropic essence* and that he destroys some 'creation', some 'nature' that would on the contrary have a *negentropic essence* – alive, profuse and fecund, whether animal or vegetable. Plants and animals are indeed organic orderings of highly improbable inert matter (as is all negentropy), yet all life unfurls and succeeds only by itself intensifying entropic processes: plants and animals are themselves only an all too temporary and in the end futile detour in becoming.

By consuming and thereby disassociating what Lévi-Strauss calls 'structures', all living things participate in a local increase of entropy while at the same time locally producing a negentropic order. What Derrida called *différance*, if we may indeed relate negentropy to this concept, is first and foremost a matter of *economy* and *detour*. And if it is also true that *différance* is an arrangement of retentions and protentions, as Derrida indicates in *Of Grammatology*, and if it is true that for those beings we call human, that is, technical and noetic beings, arrangements of retentions and protentions are trans-formed by tertiary retentions, then we should be able, on the basis of this concept of *différance*, to redefine economy and desire (as configurations of circuits that form themselves through these detours, as turns and spirals).

Unlike purely organic beings, those beings called human are organological, that is, *negentropic (and entropic) on two levels*: both as *living beings*, that is, organic beings, who through reproduction bring about those ‘minor differences’⁷¹ that lie at the origin of evolution, and hence at the origin of what Schrödinger called negative entropy,⁷² and as *artificial beings*, that is, organological beings, who produce differentiations that are no longer those of what we refer to as a species but of a ‘kind’, which in this case is humankind – which is what Simondon called the process of psychic and collective individuation.

Artifices are always detours, detours that are always more or less ephemeral, like the genus of insects named ephemera, neither more nor less ‘without why’ than those roses that are much prized in Great Britain, and that are themselves essentially artificial.⁷³ But these artifices, inasmuch as they give rise to the arts and to works and artworks of all kinds, as well as to science, can infinitize themselves, and can infinitize their recipients beyond themselves, that is, beyond their own end, projecting them into an infinite protention of a promise always yet to come, which alone is able to pierce the horizon of undifferentiated becoming.

One might offer the retort that my own objection to Lévi-Strauss, that organological negentropy is not just organic, and constitutes what I thus refer to as *Neganthropos*, necessarily implies that the organological is nothing but an accelerator of entropization that precipitates the end and from this perspective shortens what is ultimately essential, namely, the time of this *différance*. But this would be to precisely misunderstand what I am trying to say.

There is no doubt that the question of speed in relation to thermodynamic physics, as well as biology and zoology, is a crucial issue. But the question here is of a *politics* of speed in which there are opposing possibilities, and where it is a matter of knowing *in what way, where, on what plane and for how long* what, in order to define the dynamic of human evolution, Leroi-Gourhan called the ‘urge to conquer space and time’, *increases or reduces entropy*.⁷⁴ The concept of idiotext with which I have been working is conceived precisely in order to understand something not just as a question, but rather, as Deleuze said, as a problem.

In a situation as exceptional and unsustainable as the Anthropocene, only a resolute *assumption* of the organological condition, that is, an adoption of the organological condition, directed towards an increase in negentropy, can transform the speed of technological vectors currently at work – in a world where today the digital reaches speeds of two hundred thousand kilometres per second, or two thirds of the speed of light, which is some four million times faster than the speed

of nerve impulses. Only such a resolute adoption or assumption of the organological condition will allow us, in a literal sense, to save time, that is, differentiation, insofar as, precisely, a transvaluation of the industrial economy can commit us to and engage us with the Neganthropocene, and disengage us from the Anthropocene.

If the hyperbolic negentropy in which the organological becoming of the organic consists installs a neganthropology that accelerates (entropic and anthropic) becoming, it can nevertheless also transform this acceleration into a future that differs and defers this becoming, according to the two senses of the verb *différer* mobilized by Derrida in his term *différance*. Hence a (negentropic and neganthropic) future can be established from this infinitizing form of protention that is the object of desire as a factor of (psychic, social and technical) individuation and integration – failing which, *différance* will remain merely formal.

It is in the light of these questions – effaced by Lévi-Strauss's *triste* statement, his sad and gloomy words erasing the *indeterminacy* of the future under the *probabilistic* weight of becoming – that today we must reinterpret Spinoza.

5 Noetic intermittence and cosmic potlatch

Organological beings are capable of purposefully organizing the negentropic and organo-logical works that we are referring to here as neganthropic. Depending on how they undertake this organization that is both psychic and social, depending on the way that they do or do not take care of the anthropic and neganthropic power in which their behaviour consists, they can either indifferently precipitate a release of entropy, or, on the contrary, differ and defer it – thereby constituting a *différance* that Simondon called individuation and that he thinks as a process, as does Whitehead.⁷⁵

We ourselves support a neganthropological project conceived as care and in this sense as an economy. This economy of care is not simply a power to anthropologically transform the world (as ‘masters and possessors of nature’⁷⁶). It is a pharmacological knowledge constituting a neganthropology in the service of the Neganthropocene, in the way that Canguilhem conceives the function of biology as the knowledge of life in technical life, and in the way that Whitehead thinks the function of reason within a speculative cosmology.

Of course, we must identify and describe the ‘negative externalities’ that the ‘neganthropy’ generated by anthropization propagates in ‘anthropized’ milieus. But this is not a question of nullifying neganthropy. Rather, and on the contrary, it is a matter of passing from

anthropization to neganthropization by cultivating a positive pharmacology no more nor less ephemeral than life that is carried along in becoming, as is everything that ‘is’ in the universe. This care is the very thing in which this neganthropology *consists*, and it is what Lévi-Strauss always ignored, by ignoring and deliberately censoring the thought of Leroi-Gourhan.

This situation stems from the fact that Lévi-Straussian anthropology is *founded* on the repression of organology (to which Leroi-Gourhan drew attention), and on ignoring the *neganthropological* question that prevails *beyond* any anthropology. This repression of the organological can be related to the notion of *dépense*, of expenditure as conceived by Georges Bataille:

Every time the meaning of a discussion depends on the fundamental value of the word *useful* – in other words, every time the essential question touching on the life of human societies is raised, [...] it is possible to affirm that the debate is necessarily warped and that the fundamental question is eluded. In fact [...], there is nothing that permits one to define what is useful to man.⁷⁷

At stake here are those ‘so-called unproductive expenditures’⁷⁸ that are always related to sacrifice, that is, to ‘the production of sacred things [...] constituted by an operation of loss’.⁷⁹ *Every loss sacrifices, sacralizes and sanctifies a default of being older than any being* (and this is how I read Levinas⁸⁰). In this *tenor of primordial default*, noetic intermittence is constituted, and can project itself speculatively, only in and as a cosmic totality conceived neganthropo-logically – that is, as the knowledge and power to create bifurcations within entropy.

All noetic bifurcation, that is, quasi-causal bifurcation, derives from a *cosmic potlatch* that indeed destroys very large quantities of differences and orders, but it does so by projecting a very great difference on another plane, constituting another ‘order of magnitude’ against the disorder of a *kosmos* in becoming, a *kosmos* that, without this projection of a yet-to-come from the unknown, would be reduced to a universe without singularity.⁸¹

Thus expenditure, even though it might be a social function, immediately leads to an agonistic and apparently antisocial act of separation. The rich man consumes the poor man’s losses, creating for him a category of degradation and abjection that leads to slavery. Now it is evident that, from the endlessly transmitted heritage of the sumptuary world, the

modern world has received slavery, and has reserved it for the proletariat.⁸²

In this proletarianized world, the expenditure of the ‘rich man’ nevertheless becomes sterile:

The expenditures taken on by the capitalists in order to aid the proletarians and give them a chance to pull themselves up on the social ladder only bear witness to their inability (due to exhaustion) to carry out thoroughly a sumptuary process. Once the loss of the poor man is accomplished, little by little the pleasure of the rich man is emptied and neutralized; it gives way to a kind of apathetic indifference.⁸³

At a time when the becoming-automatic of knowledge forms the heart of the economy, and does so at the risk of denying itself as knowledge by taking the form of *a-theoretical computation*, we will take up this project once again, from an epistemic and epistemological perspective, in a second volume of *Automatic Society*, to be subtitled *The Future of Knowledge*. There we will show:

- that the question of the future of knowledge is *inseparable* from that of the future of work;
- that this question must be translated into an *alternative industrial politics* that gives to France and to Europe their place in becoming – and as transformations of this becoming into futures.

6 Becoming, future and neganthropology

Our question is the future – of work, of knowledge and of everything this entails and generates, that is, everything – insofar as it is *not soluble* into becoming. That it is not soluble means nothing other than the fact that it cannot be dissolved and (re)solved without this dissolution being also its disappearance, that is, *ours*. This possible dissolution *in fact* is what is not possible *in law*: *we do not have the right to just accept this and submit to it*.

Lévi-Strauss cannot conceive this distinction between, on the one hand, that which remains *radically undetermined* because it is strictly and constitutively *improbable* and *remains to come*, and, on the other hand, that which is most probable, and which is as such statistically determinable.

If Lévi-Strauss is obviously not unaware of the many discourses emerging from philosophy that affirm the supra-causality of freedom

– and therefore of will – in and before nature, he ultimately sees in this only an entropic power that accelerates the decay of the world, far removed from any differing and deferring that could give rise to new difference. In so doing, Lévi-Strauss adopts that nihilistic perspective the advent of which was announced by Nietzsche seventy years beforehand.

We cannot accept the Lévi-Straussian perspective. We cannot and we need not resolve to dissolve ourselves into becoming. We cannot, because to do so would consist in no longer promising to our descendants any possible future, a future to come, and we need not because Lévi-Strauss's reasoning is based on what in philosophy since its inception has consisted in repressing the neganthropological dimension of the noetic soul and of what we call 'human being', namely, *the passage from the organic to the organological* in which this soul and being *consists*.

Lévi-Strauss proposes to understand anthropology as entropology. But he takes no account of the negentropy generated by the technical form of life as described by Canguilhem, that type that characterizes the noetic soul – whose very noesis (producing what Lévi-Strauss called the 'works' of man) is its intermittent fruit.

Any noetic work, as the intermittent fruit of noesis, produces a bifurcation and a singular difference in becoming, irreducible to its laws (improbable, quasi-causal and in this sense free – as freedom of thought, ethical freedom and aesthetic freedom). It would here be necessary to read Schelling. But such a noetic work thereby engenders a *pharmakon* that can turn against its own gesture – and this is why the *Aufklärung* can give rise to its contrary, namely, to what Adorno, Horkheimer and Habermas follow Weber in describing as rationalization.

Prior to Lévi-Strauss, Valéry, Freud and Husserl all drew attention to this duplicity of spirit that was for the Greeks of the tragic age their Promethean, Epimethean and hermeneutic lot. But, unlike Lévi-Strauss, neither the Tragics, nor Valéry, nor Freud, nor Husserl denied the neganthropological fecundity of noesis and of its organological condition.

This denial is equally characteristic of the *nihilism suffered* by those who cannot conceive the *nihilism enacted* by absolutely computational capitalism, that is, by a capitalism that has lost its mind and spirit – and has done so thanks not just to its rupture with its religious origin and the dissolution of belief into fiduciary and calculable trust, but to the destruction it has wrought upon all theory through the correlationist ideology founded on the application of supercomputing to 'big data'.

Capitalism's loss of spirit leads to the total proletarianization of the mind itself. To fight against this state of fact in order to restore a state of law is to prescribe, for the digital *pharmakon* that makes this state of fact possible, a new state of law that recognizes this pharmacological situation and that prescribes therapies and therapeutics so as to form a new age of knowledge.

The discourse of Lévi-Strauss is profoundly nihilistic, literally desperate and fundamentally despairing – and as such it is neither lucid (enlightening) nor rational. Rationality does not submit to becoming, and in this lies the unity of the diverse dimensions of freedom, that is, of the improbable as constituting the undetermined horizon of all ends worthy of the name, within that 'kingdom of ends' that is the *plane of interpretation* of what we refer to as 'consistences'. The latter do not exist, in the sense that, as Whitehead indicates:

Reason is a factor in experience which directs and criticizes the urge towards the attainment of an end realized in imagination but not in fact.⁸⁴

Reason is an organ, as Whitehead says, and this organ organizes the passage from fact to law, that is, the realization of law in facts, law being the new, that is, negentropy:

Reason is the organ of emphasis upon novelty. It provides the judgment by which realization in idea obtains the emphasis by which it passes into realization in purpose, and thence its realization in fact.⁸⁵

Consistences are promises – they are inherently improbable, and it is as such that they make desirable a *Neganthropos* that remains always to come,⁸⁶ that is, improbable.⁸⁷ This improbability is a spring that returns again in the winter of universal decay, the universe localized on this inhabited Earth being the site of 'two main tendencies':

the slow decay of physical nature [whereby,] with stealthy inevitableness, there is degradation of energy [whereas] the other tendency is exemplified by the yearly renewal of nature in the spring, and by the upward course of biological evolution. [...] Reason is the self-discipline of the originative element in history.⁸⁸

It is this discipline that is lacking in Lévi-Strauss, and in his entropology.

3 Symptomatology of the Month of January 2015 in France

When I received this invitation, I enthusiastically accepted the offer from Ebrahim Moosa and the University of Notre Dame to participate in this encounter here in Rome. And even though I am not a believer – at least in the classical sense, by which I mean that I am not what is called one of the faithful within the meaning of the Churches – I do believe that the question of faith and fidelity is the great problem of what I call non-inhuman being, as it continuously confronts what, in *The Normal and the Pathological*, Georges Canguilhem called the ‘infidelity’⁸⁹ of the milieu: humankind is characterized by the fact that it produces its own milieu, its own living environment, and this self-production constantly confronts an infidelity to itself that it structurally secretes throughout the exosomatic organogenesis in which the irresistible concretization of its technicity consists.

Canguilhem concludes that ‘the power and temptation to fall sick are an essential characteristic of human physiology’.⁹⁰ Hence we might refer in this instance to an *organology of temptation*.

The reason for my enthusiastic response to your invitation is that, for a long time, I have wanted to engage a dialogue with theology, and hence with theologians, and because at this very moment, in Paris, I have been trying to renew the question of hermeneutics – in the current context of reticulated society, the worldwide establishment of which began in the spring of 1993 with the introduction of the World Wide Web, and which we might say constitutes a specific stage in the accomplishment of what Martin Heidegger called *Gestell*.

Beginning as it did on 30 April 1993, this structural and generalized reticulation, which also involved sending a very large fleet of geostationary satellites into orbit, has, since then, caused something that is not quite a revolution, but that has for several years been referred to as a disruption (rupture, upheaval, disturbance, interruption), a term currently utilized by marketing but that originates from physics.

That the current use of this term comes from marketing is no accident: the disruption provoked by marketing is the very thing that has given rise to the systemic infidelity characteristic of consumer capitalism and to its consequent immense problems.

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I would like to engage a dialogue not only with theologians but with those who care about the spirituality of *esprit*, *Geist*, spirit, *spiritus* – and hence also with the anthropologists of *mana* and *hau*: I aspire to reopen a question of spirit rendered unthinkable by that science of the mind calling itself ‘cognitive science’. And it has done so thanks to what, according to my own analysis, amounts to a denial (*Verneinung*) and repression (*Verdrängung*) of the spirit insofar as it is always the precarious and metastable unification of a division that can never be eliminated – which means that one can lose spirit, lose one’s mind, which also means, in French as in English, to become mad, to go crazy.

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The French translation of *Witz* as *mot d’esprit*, the sound of which resembles the English *wit*, allows us to understand how Freud highlighted the fundamental relationship that exists between the spirit and laughter – and I am working into a forthcoming book a chapter that will be called ‘Rire jaune’, ‘Yellow Laugh’, a French phrase that means to laugh in such a way as to conceal one’s annoyance, one’s pain, one’s embarrassment, one’s sadness, or distress, or disorientation, sometimes one’s humiliation, and the despair this always causes.

The relationships between spirit, laughter and despair are keystones of psychoanalysis inasmuch as I believe it to have been historically constituted through the experience of melancholy, which Freud discussed in *Civilization and Its Discontents*⁹¹ and which I interpret as an experience of the *pharmakon*, an experience that Paul Valéry and Edmund Husserl had already identified as a poisonous becoming in the life of the spirit – Valéry in ‘La crise de l’esprit’⁹² and Husserl in *The Crisis of European Sciences*⁹³ – a becoming and a development that we are now facing on a global scale, and that we experience through the profound changes taking place in the psychic apparatus as a result of the technologies of mind and spirit that today serve to destroy the spirit.

In *Civilization and Its Discontents*, Freud raises questions that I believe are prerequisites for any analysis of the contemporary psychic and spiritual apparatus insofar as it is, moreover, deprived of spirit and threatened with a loss of reason, in a sense that is primordial and irreducible, constituted as it is by its pharmacological character, so that it can always be de-spiritualized, so to speak – that is, become intoxicated, and thereby regress, of which the *rire jaune* that gripped France in January after the killings of 7 January, and the coverage of *Charlie Hebdo* that followed, constitutes a symptom of extraordinary complexity.

This potential de-spiritualization is the underlying basis of what Christianity calls temptation. It is also the tension that runs through the bipolarity constituting what Gilbert Simondon calls the psychic individual. And it is, as well, what consumer capitalism induces, by systematically soliciting the drives at the expense of the libidinal economy as conceived by Freud, for whom it was the guarantee maintaining the unity of the psychic apparatus – and, along with it, of society.

If the context of this intervention, in which I began by speaking to you of belief, faith, fidelity, spirit, laughter, the unconscious, temptation, the libidinal economy and contemporary capitalism, has much to do with what happened in Paris between 7 and 11 January – and where I sincerely doubt that this was a genuine moment of public debate, which freedom of expression alone makes possible, this being also the condition of political life – it nevertheless also concerns, and much more broadly, the loss of the feeling of existing that afflicts our societies, a feeling that I began to analyse in 2003, in *Aimer, s'aimer, nous aimer*, a book concerned with the events that unfolded in 2001 and 2002.⁹⁴

As for the way that 2015 began in France, it has been dominated less by political debate than by reactions and symptoms – in the sense of ‘symptomatology’ invoked by Paolo Vignola,⁹⁵ and this is why I have chosen as my title, ‘Symptomatology of the Month of January 2015 in France’. As such, this response to what some believe we should call ‘15 January’ (as in France one refers to ‘May 68’) seems to me to amount to a form of stupidity that is perfectly symptomatic of the generalized disorientation of minds and spirits characteristic of a derelict world.

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What I try to think, and which inclines me towards you despite my lack of religious and theological culture, lies not only in what can be called the spiritual question, but also, inscribing myself in the aftermath of what is called (including in theology) the death of God, in the following:

- *I believe* with Freud that the father is all the more powerful once he is dead, and that it is only in this way that it is possible to think – if it is possible – what is often wrongly called the ‘return of the religious’ in the context of contemporary science and technology, which is to say of contemporary capitalism (for in this world these three terms are inseparable);

- *I believe* that the question of belief is not soluble into that of knowledge (the question of belief being therefore also that of faith, and hence of fidelity);
- I take extremely seriously the Nietzschean statement that, describing capitalism as nihilism – since what is involved with the levelling of all values is clearly capitalism, which also constitutes the horizon of the work of Max Weber – proposes that what is required beyond nihilism, and as the transvaluation of all values, is a new belief.

What is the relationship between the *possibility* of this new belief and religious belief? And, more particularly, how does this question arise in a singular way in the context of what we now call the Anthropocene, which is also the context of the encyclical on ecology soon to be published by Pope Francis?⁹⁶

These are the organizing questions for what I will say in what follows. And here, I wonder how we can imagine, if it is imaginable, that there could be Jewish and Muslim theologies of the death of God – as there are Christian theologies of the death of God, the death of God through his Son being an originally Christian concept, as Christianity is the religion of the meaning of the death of Christ, and because, after Hegel, Marx and Nietzsche, this *mortality of God* takes on a new meaning, through which this theology explores and interprets the death of God.

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These questions formed the context for my reflections on the object of desire, which led me to propose that God is the name of the object of all desires – and I am here only repeating, in a perhaps debatable way, what I believe I have understood in Aristotle's treatises *On the Soul* and *Metaphysics*, and which I argue is the meaning of the term 'ontotheology'.

To accept this statement – 'God' refers to the object of all desires – is to turn questions of belief, faith and fidelity, which were conceived on the basis of religious injunctions and prescriptions, into questions of libidinal economy, where libidinal economy obviously refers not just to the economy of sexuality, even if it is *always also* the economy of sexuality.

It was on the basis of such considerations that, seven years ago, in a dialogue with Jean-Luc Nancy, I took a position that was not exactly 'for religion', but for a *dialogue* with religion faced with the adversity (and hence with an adversary) constituted by the hegemony of

marketing over ways of life.⁹⁷ In this dialogue – in which I explained my decision not to become involved in the project of the journal that published this dialogue, the particular issue of which was given the title ‘Pourquoi nous ne sommes pas Chrétiens’ (‘Why We Are Not Christians’) – I said that, if it is true that in the nineteenth century religion and its ecclesiastical institution had, in their institutional hegemony, effectively become opponents of thought and philosophy, nevertheless the historical task of philosophy *today* is, on the contrary, to rethink the question of desire *with* religions and to struggle against the *liquidation* of desire by marketing, which subjects scientific programs to the liquidation of the life of the spirit – in the sense of Valéry, Husserl and Freud – and of the psychic apparatus that we refer to, at the origin of ontotheology and with Aristotle, as the noetic soul.

This is also why, more recently, I stated to my Christian and non-Christian friends that I planned to start a movement gathering together ‘compagnons de route’ of Pope Francis. This French expression, ‘compagnons de route’, ‘fellow travelers’, refers to those ‘intellectuals’ who, after the Second World War, accompanied the French Communist Party without themselves being communists. Today, Pope Francis, whom I consider exemplary in his struggle against corruption – of souls, bodies, institutions, organizations and terrestrial environments – needs companions, and it was to further this approach that I came here, to Rome, at the invitation of a Muslim, and to address to you and to the Pope an invitation to visit France in the coming autumn, prior to the conference of the United Nations,⁹⁸ and to the Basilica of Saint-Denis, a place of great importance, if not a mecca, in the history of Christianity, and a place where I, along with my friends and companions, am attempting to foster a new approach.

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Today, the word *esprit*, *Geist*, *spirit* is, then, the subject of a denial and a repression, and at the same time of embarrassment and even of a malaise, or of discontent – which is obviously in part tied to the discontent of civilization and culture referred to by Freud, and where ‘*le mot d’esprit*’, ‘*Der Witz*’, ‘wit’, which introduces laughter into the mind, is what also gives rise, behind laughter, to the *diabolon* of the unconscious (which is also what, in dialogue, paves the way for Socrates’s *daimōn*).

I have argued for twelve years that capitalism is destroying the spirit. It is not just that the word *spirit* was used by thinkers who then inspired totalitarian practices – Hegel, whose dialectic became the dictatorship of the proletariat historically concretized as the Soviet Gulag; Heidegger, with his question of *Geist* in the Rectorate Address

(and as was unearthed and exhumed in particular by Derrida), who was not only attracted to Nazism, but allowed a fundamental element of his thought to bend in that direction. It is not only because this word, ‘spirit’, happened to be used by thinkers tied directly or indirectly to what since Hannah Arendt we call ‘totalitarianism’ that the word spirit – *Geist, esprit* – has been repressed.

And it is not only because the Trinitarian spirit lies at the heart of Christianity. Without in any way denying the *seriousness* of this or that perspective tying the word spirit to the totalitarian perspective on totality, and without wanting to deny what muting it, so to speak, gave to the laicization that was enshrined in the secularization of the origins of capitalism, I think that what constitutes the fundamental principle of the *liquidation* of the concept of spirit is that the *spirit is that which returns as the incalculable*, and as the ghost of the incalculable, whereas capitalism, as Max Weber said very early on (not long after Nietzsche), is what must *eliminate* the incalculable – which it does even at the risk of eliminating itself.

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Among the fields of science, it is cognitive science – but in this case I wish to contest its scientific status, that is, its rationality – that executes this liquidation of the question of spirit, and that *makes* this liquidation (in a way that is the complete opposite of my own position) the very foundation of science, and hence of the life of what is no longer the human *spirit* (in Hannah Arendt’s sense when she refers to the life of the spirit) but the *mind*, itself thought mechanistically and computationally.

How and why is it *possible* for the *mind* to dilute and *disintegrate* the *spirit* – the latter being the guarantor, in noesis, of *integrity*, which in the first place refers to the integrity of truth, *alētheia*? (And I must note, here, without having the time for elaboration, that integrity does not mean totality.) This dilution began with the expansion of cybernetics during and after the Second World War, in a context of potential nuclear conflict, firstly with Nazi Germany and then with Soviet Communism, ultimately leading to artificial intelligence programs and hence to the elaboration of the cognitive sciences paradigm.

This possibility, however, rests more profoundly on a feature of what, since the twentieth century, and after Heidegger, we call the ‘history of metaphysics’ – where Kant represents a turning point. I have tried to show, in *Technics and Time*, 3, that there are paradoxical and contradictory tensions between the theory and practice of Immanuel Kant with respect to the possibility of schematization.⁹⁹ I argue that the schematization that allows the understanding to meet

up with intuition presupposes a fourth, techno-logical synthesis of the transcendental imagination, which thus goes beyond what Kant explains in the ‘Transcendental Deduction of Categories’, and I also argue that we must make this question more general by injecting it into the heart of psychoanalysis and by showing that this question is what cognitive science is incapable of thinking, and what it denies in advance, regardless of the reference to the computer as the ‘model’ of thinking conceived as calculation.

By distinguishing the drives from the instincts, reserving the term ‘drive’ for what submits to the *différance* of a libidinal economy – Derrida’s *différance* with an ‘a’ – the drive being, therefore, unlike instinct, capable of changing its object, submitting the drive to a deferral of the satisfaction of its goal, which also produces a differentiation, an idiomatization and a diversification of these circuitous paths via which the drive constitutes its object of desire according to the schema of what Jacques Lacan called *das Ding*, psychoanalysis thereby describes an economy that *presupposes* the technicization of life (but where psychoanalysis does not itself perceive this precondition of what it describes).

This means not only that the reality principle, of which work is the effective reality, is imposed on every form of human life, and constitutes the condition of exosomatic organogenesis, but that it is only through the mediation of the transitional object that the psychic individual can be inscribed and formed in and through the symbolic.

On the basis of the work of Husserl and Derrida, I have proposed the concept of tertiary retention in order to think the transitional object that is also and already a *pharmakon* (as Donald Winnicott shows), just as the fetish allowed Freud to think the drive. And I have striven to show that the tertiary retention that is the *pharmakon*, of which the transitional object and the fetish are primordial instances, plays a crucial role in the possibility of noesis, and especially in the apodictic noesis that rationality constitutes in the Western tradition – and in relation to which Husserl showed that the *pharmakon* of alphabetical writing is its condition.

The *pharmakon* is thus the condition of the dual intellective and spiritual dimension of what Aristotle called the noetic soul. This is thought in Kant as the dual dimension of consciousness formed through the understanding and reason in the encounter with intuition, that is, the world, desire being the dynamic process of everything through which (in the *Critique of Judgment*) the world exceeds itself – that is, infinitizes itself.

The noetic soul is intellective *and* spiritual, and this is why Greek *nous* is translated into Latin as both *spiritus* and *intellectus*. Kant’s

critique of reason distinguished the intellect from what he called, not spirit but, precisely, reason. He argued that this analytical faculty that is the intellect, as the understanding, can unfurl the logical consequences of any analytical, conceptual given, on the basis of ‘pure concepts of understanding’, without anything else having to be added. I myself argue that this automatic intellect, which can automatize itself in the sense of artefactualizing itself, itself presupposes a primordial artefactuality of the schematization – and, through it, of the understanding itself, that is, of its concepts and categories – and that it can, therefore, function *without reason*, as, for example, automated artificial intelligence.

To generalize Freud’s position is to show that desire – and I refer to desire in the sense that Diotima speaks of it in *Symposium*, that is, as the condition of *logos*, of knowledge, of philosophy and of the quest for truth – is itself conditioned by its retentional artefactuality, by tertiary retention, for instance by the transitional object, but also by the rosary – and this is why Pascal can raise the question of an automatic technicity of faith.

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It is due to this primordial artefactuality of the spirit – which is originally *divided* precisely because the artefact is the *pharmakon* that always makes possible both the infinite exceeding of the world by the world, and the imminent possibility of ruining it by turning it into the *immonde*, the vile – that non-inhuman beings can individuate and differentiate themselves.

The spirit is always already divided into spirits that nevertheless always seek the unity of a ‘spirit’, a *Geist*, a *Spiritus* beyond *Intellectus* and beyond *Zeitgeist* – such as when language idiomatizes and localizes itself in diachronic multiplicities, as long as this is not prevented by the intermediation of what Sylvain Auroux described as grammatization,¹⁰⁰ which, today, in reticulated society, is reaching an extreme limit that is, indeed, an *apocalyptic* limit, in the Greek sense of this word.

In *Disbelief and Discredit*, the third volume of which is entitled *The Lost Spirit of Capitalism*, I tried to show how *the war of spirits has become a war against the spirit* – a war led by the *mind*, which was already the issue for Adorno when he described how that reason that stems from the Enlightenment has degraded into rationalization.¹⁰¹ I have since endeavored to show, in *Automatic Society*, how this leads to a destruction of the social relation.¹⁰²

A society, whatever it’s form, is above all an apparatus for the production of fidelity. Capitalism has transformed the type of fidelity

that has structured Western society – founded on that faith proper to monotheistic religious belief – into trust, understood as fiduciary calculability. Credit is thus massively inverted into what consequently becomes discredit, and a completely new form of *mécréance*, of misbelief and miscreance – rationalization leading to what Max Weber described as disenchantment. I argue that rationalization and disenchantment are tied to a process of grammatization that connects back to the whole history of the hypomnesic *pharmakon* that Socrates described in *Phaedrus*.

Grammatization effects this disenchantment as the technology of calculation – in particular as financial technology, as Clarisse Herrenschildt shows in *Les Trois Écritures*.¹⁰³ It begins to spread across society after the Renaissance and becomes more widely generalized as the capitalist organization of social relations. It is pharmacological, just like the book, which made possible sophisticated logography as a means of power, but also formed the milieu for the enrichment of profane knowledge.

The alphabetical noetic milieu becomes the apodictic milieu, that is, it conforms to the canons of *alētheia*, and it is constituted through the books of geometry, history, geography, literature, law and so on, such as for example the Book, that is, sacred writing, all these books being what Husserl called ‘objects invested with spirit’.¹⁰⁴ It was Socrates who opened up the question of the pharmacology of spirit that books form – and therefore also *the* Book, whether the Bible, the Gospels or the Koran.

Capitalism arose out of the spiritual conflict that resulted from the advent of the printing press, which again divided Christianity in the service of a new therapeutics: this was firstly religious, in the form of the Reformation and Counter-Reformation, and then secular, that is, ‘political’ and ‘scientific’. This then constitutes the stakes of the ‘bourgeois’ French revolution, which, in France, preceded by some years the industrial revolution that began in England. Hence begins the transformation of fidelity into trust and secularization, the full accomplishment of which is what Nietzsche called nihilism.

After the printing press there occurred a ‘pharmacological turn’, a continuation of grammatization via the reproduction of gestures by automatons, leading to machinism. In this turn, what changed was the relationship between *otium* and *negotium*: this becoming then passed through a new socialization of *hypomnēmata* wherein the latter eventually led to the formation of a *ratio* now understood no longer as reason but as calculation, firstly in the form of those account books examined by Weber, and then as the mechanical reproduction

of documents leading eventually to computing and ultimately to the current digital reticulation.

I argued in *Disbelief and Discredit* that this transformation is reflected in the American motto inscribed on the dollar bill, which, in positing that it is ‘In God We Trust’, is no longer quite a statement of our *belief* in God.

This strange evolution (from ‘to believe’ to ‘to trust’) of the verb used to designate the relationship of fidelity of noetic creatures to their Creator would not be comprehensible were it not for the fact that we read it inscribed on paper that constitutes an *accounting unit*, a *unit of currency*. It is the *relation* to what stands (and to *the One* who stands) on another plane than creatures, a relation that was constituted in a relation to the Book, which is therefore affected by what, in Nietzsche’s word, thus takes the name of nihilism – Heidegger arguing that, with this name, it is, for Nietzsche, *the suprasensible as a whole* that is in question.

If Nietzsche can say that it is still a long time before the murderers of God will be able to have understood what will have been their gesture –

‘I come too early’ [...]. This tremendous event is still on its way, wandering; it has not yet reached the ears of men. Lightning and thunder need time; the light of the stars needs time; deeds need time, even after they are done, in order to be seen and heard¹⁰⁵

– perhaps we ourselves, who arrive more than 130 years after this word of Nietzsche (in *The Gay Science*, in 1884), are now entering the trial of this revelation *as such*: now perhaps the dark night, and not just the shadows that herald it, falls upon us, and does so as this apocalypticism without God that now haunts the entire world, given that since 2008 the consumerist model, by *collapsing*, has made clear that it is no longer just the financial objects of *logos*, constituted by their *hypomnēmata*, which in the twentieth century changed their meaning and social function, but also everyday and familiar objects – and, along with them, and since they alone can definitively undermine the foundations, *das Ding*, the Thing.

The Thing is the object of all desires – but it is an object *that does not exist*, if we admit with Lacan that this Thing is an object of which there is never any *experience*. It is a kind of *a priori* of desire that closely resembles Aristotle’s *theos*. The object of all desires, *das Ding*, taking thus the place of God, opens (like the *theos* of Aristotle) every horizon of expectation, and in this way constitutes the *arche-protection*.

The capturing of *otium* and its dissolution into *negotium* is the reality of that industrial modernity that generates technology and what some people call technoscience.¹⁰⁶ Only now has this been fully accomplished, as the ‘information society’ and the ‘knowledge industry’ – at the cost of a mutation of the university whereby the data sciences replace the humanities, all in the service of innovation conceived as the chronic obsolescence of industrial products, and leading to the systemic infidelity that establishes itself as libidinal diseconomy.

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The great transformation that allowed the market to be disembedded in the form of a total domination of *negotium* was enabled only by placing *otium* into its service. Science, which fell within the sphere of *otium*, and technics, which fell within *negotium* – science and technics thus being opposed just as the nobles who did not work were fundamentally separated from the needy – become, with the advent of the industrial revolution, confounded. This confusion has been the condition of possibility of capitalism and of its accomplishment as nihilism.

And yet...

And yet hypomnesia, which is to say mnemotechnics, and, with it, technics in general, has *always* been the condition of anamnesis, which is to say, of knowledge as it was conceived by Socrates, that is, as the experience of apodictic truth (see Plato’s *Meno*). It is this that Jacques Derrida made clear in ‘Plato’s Pharmacy’.¹⁰⁷

Is, then, the opposition between science and technics, translated socially into the nobility of *otium* and the ignominy of *negotium*, nothing more than a social construction elaborated by the dominant to justify their domination, as was claimed by both bourgeois and then socialist revolutionaries? Is it what must be fought against in the service of a new revolution that may never come?

I believe otherwise. *Otium* and *negotium* constitute the bipolarity constitutive of the tension characteristic of the pharmacological situation resulting from the exosomatic condition in which consists the organogenesis of the non-inhuman being. In this situation, a form of knowledge, whatever it may be – as *savoir faire*, *savoir vivre* or *savoir conceptuel*, knowledge of how to do, live or conceptualize – is constituted by organological artefacture, which in turn constitutes the *Zeitgeist*. It is grammatization that enables the analytical discretization on which operations of the understanding are founded, delivering to reason the materials for an interpretation of ends such that they rise above analysis only on the condition that they break with it, and do so as decision, that is, as bifurcation.

With this last term, I am adopting the vocabulary of systems theory, which seems to me to be necessary in order to think the future within the Anthropocene. This is the name by which we refer to what is in fact the concrete reality of nihilism. As the levelling of all values, the nihilism that is the Anthropocene imposes an entropic becoming without a future – where the stakes of ‘spirit’ are the difference between the future and becoming, between *avenir* and *devenir*. Becoming is entropic. The future is negentropic. Both human entropy and human negentropy are produced by the toxic and curative potentialities of the *pharmakon*, which stems from exosomatic organogenesis. It is towards a constant re-elaboration of this state of fact in the service of a state of law that the spirit works to inscribe the difference between becoming and future.

This question is being played out today, and it is being carried to an extremity that was still inconceivable just a few years ago. So-called correlationist models of the automated processing of ‘big data’ make real and concrete the possibility of an automatic society that will prove to be unlivable – because it is entropic, condemned to a brief existence, something that worries Stephen Hawking and the scientists who co-signed his recent column about artificial intelligence.¹⁰⁸

Such are the stakes of the Anthropocene, and hence of ecology as an organology of reason and a pharmacology of spirit, calling for an urgent re-evaluation of the hermeneutic question in reticular society – a re-evaluation in the service of what I call the Neganthropocene, understood from the perspective of a neganthropology.

4 Elements of Neganthropology

The augmentation and enhancement of the human brain – undertaken by arranging so-called neurotechnological prosthetic pathways, such as cerebral implants, in combination with neurochemical pathways, so as to optimize neural performance and conceived in direct relation to these additional units – is a *new stage* in the history of noetic life and of the *organological augmentation and transformation* that has, ever since the beginning of hominization, occurred *continuously*.

As with many human organs, the brain has always organologically ‘augmented’ and transformed itself: this self-transformation is precisely what characterizes noetic life inasmuch as it is also and immediately technical life, that is, a form of life that realizes its dreams. But, unlike other organs, the brain can be enhanced through internal processes of disorganization (that is, defunctionalizations) and reorganization (refunctionalizations) that occur in accordance with external organs. These disorganizations and reorganizations correspond to what Freud described as defunctionalizations and refunctionalizations of the sensorimotor system. And we now know that these transformations are based on what Stanislas Dehaene has described as neuronal recycling.

What is really new about this organological transformation, this *endosomatization of the exosomatic* – which consists in this addition of units, that is, prostheses conceived and fabricated *exosomatically* but endosomatically *implanted*, just as are those prostheses added to the heart or to the ears – lies in the fact that *it is now tertiary retentions* (that is, technical artefacts, which shape and materialize *knowledge*, that is, *memory and spatialized time*), produced in an industrial and standardized way, that are beginning to be *introduced into the organ of primary retentions and secondary retentions that is the brain*.

Hence is heralded the arrival and the realization of neuroindustry – some of whose issues were anticipated in *The Final Cut* (2004), as Patricia Pisters has shown in her analysis of the film.¹⁰⁹ The neuroindustry opens onto the more general question of the *management of exosomatization according to the selection criteria of the market*, where exosomatization is in general terms what characterizes the technical form of life that appears with and as hominization.

Transhumanist ‘storytelling’¹¹⁰ is the attempt to legitimate the subordination of such a selection to the criteria of the market. This necessarily and exclusively computational criteriology, however, is

absolutely illegitimate, for reasons that are not ethical but systemic: it leads inevitably to an increase of entropy. In other words, a critique of the transhumanist project as subordinating exosomatic becoming to market criteria, and as radicalizing what we are now calling disruption, must start from an analysis of the process of exosomatization such as that undertaken by Nicholas Georgescu-Roegen from the point of view of bio-economics,¹¹¹ which is more relevant today than ever before.

No serious reflection on the stakes of transhumanism, of which cerebral rearrangement is obviously one highly specific and exemplary aspect, and on the pharmacology that all this constitutes, can be conducted without investigating organogenesis. Organogenesis characterizes the history of life in general, but, later, with the appearance of the technical form of life, that is, of what Aristotle called the noetic soul, it becomes above all exosomatic. As such, it raises the question of the organo-logical and pharmaco-logical condition of noesis, and of the form of life to which it corresponds, but also of the *function of noesis* in life, and, faced with the disruptive transformations currently underway, the question of the future of noesis itself.

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Noesis is a specific case of the negentropic process that is life in general, and it is so inasmuch as it constitutes, in its inseparable relation to exosomatization, a neganthropology that is constantly confronting the ambiguous character of exosomatic artificial organs, the latter being, as *pharmaka*, organs that make possible both the production of new neganthropic forms and a massive increase in the rate of entropy. At the moment, it is this second alternative that predominates, specifically in terms of the threat to biodiversity, but where, today, another issue looms equally large, in particular with respect to neurotechnology: the question of the threat to noodiversity.

It is firstly by asking how neganthropology has unfolded since the beginning of exosomatization, about how it has been able to struggle against the ‘entropology’ evoked by Lévi-Strauss at the end of *Tristes Tropiques*,¹¹² and by inquiring about its stages – from the purely epiphylogenetic stage that I attempted to describe in *Technics and Time, 1*, passing through the primary hypomnesic stage that begins in the Upper Palaeolithic, then the various epochs of hypomnesis, up until the most recent stage of grammatization referred to as NBIC (nano-bio-info-cogno) – it is by asking how all this has either allowed or prevented neganthropological production (that is, inscription) within the entropic becoming of the cosmos, a sequence of bifurcations constituting and opening a neganthropological future, that we can

rationally and reasonably investigate the stakes, politics and economics of the neuroindustry.

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The question of neuroindustrial reason is also and firstly that of the justice of cerebral becoming, and *in* cerebral becoming – where justice is never a question of human rights in the degraded sense in which this phrase has become entangled in the twentieth century, but, rather, the stakes and the challenge of the *coherence of reason*.

This coherence of reason, moreover, conditions *economic rationality*, and, therefore, the reason of the new critique of political economy required by the *highly entropic state installed in the Anthropocene qua process of generalized proletarianization*, which has led to the entropic explosion that now threatens biodiversity in general, including the human species, but therefore also threatens noodiversity, as the condition of noesis that is in turn the condition of any neganthropological bifurcation.

From other perspectives – linked to the process of full and generalized automation that I describe in *Automatic Society*¹¹³ – I have tried to show why and how we must now enter into an economy that systematically and systemically values negentropy, which amounts to the prospect of what I call the Neganthropocene, wherein the future lies in de-proletarianization as that which is made possible by a contributory economy.

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It is starting from these general reflections that I will make the preliminary assertion that any neuropolitics and neuroindustry must be dedicated to *maximally enhancing the conditions of rationality* inasmuch as they are evidently conditioned to a fundamental degree by a *widely distributed cerebral organology* – that is, inasmuch as they are conditioned by *the relations between noetic brains* and the exosomatic systems that support them, therein forming social organizations, which govern the relations between psychosomatic organs and artificial organs – all these transductive supports constituting the objects of general organology inasmuch as the latter names an approach to transdisciplinary research.

Behind such questions, there of course lies an astonishing renovation of the political question as such, in relation to which:

- 1 we must intensify the neganthropological potentials of each noetic individual so as to enrich noodiversity;

- 2 we must cultivate this noodiversity through social diversity, that is, a sociodiversity that takes care of its noetic heritage – its languages, archives, works, knowledge and noetic exteriorities in general;
- 3 we must therefore struggle against the extreme violence within which the massively entropic becoming provoked by the Anthropocene – that is, by generalized proletarianization – encloses us, and which, in the short term, can only explode, unless there is a resolute bifurcation in the direction of the Neganthropocene, these being the real stakes involved in what Heidegger referred to as the *Kehre*, *Gestell* and *Ereignis*.

All these analyses, which I am introducing here in view of a *global geopolitical alternative to transhumanist marketing*, build upon the work of Maryanne Wolf, as well as on the questions that I have addressed to Jean-Pierre Changeux about his book, *Neuronal Man*,¹¹⁴ in my preface to the French edition of *Proust and the Squid*,¹¹⁵ and upon my critique of Allen Buchanan's theory of the augmented human in *Better than Human*,¹¹⁶ which I presented almost four years ago at Berkeley.¹¹⁷

In what follows, and without going back over the substance of that lecture, which will be taken up again in *La Société automatique 2. L'avenir du savoir*, I would like to recall the central thesis of Maryanne Wolf's work and the questions I posed to Changeux on the basis of her conclusions.

. . .

What is quite sure is that a new process of psychic and collective individuation (in the sense given to this expression by Gilbert Simondon) will be constituted through this new stage of exosomatization, characterized as it is by a *second endosomatization*.

This amounts to the industrial production of new forms of technical life, organological and pharmacological forms whose unprecedented character resides in the fact that they are *bio-computational* and therefore *secondarily endosomatized* – a standardized endosomatization that can *replace* the noetic interiorization of exteriorized knowledge with tertiary retentions. All exosomatic organology is composed of tertiary retentions, which are thereby able to form what archaeologists call material cultures.

It is a question of knowing if, behind this process or these processes of psychic and collective individuation, as they have arisen through

the successive and parallel eras and epochs of humanity – diversely localized and temporalized through the noetic process of what Derrida called *différance*, and as the ‘history of the supplement’ – it is strictly speaking a new *regime* of individuation that is appearing, or merely one or more new *processes* of psychic and collective individuation.

If the former were to prove the case, if the new processes of psychic and collective individuation made possible by neuroindustry do contain the seeds of a new regime of individuation, then, by concretizing itself as a *mega-bifurcation* above and beyond the bifurcations through which new processes of psychic and collective individuation become possible, this would add a *fourth possibility* to the three regimes of individuation described by Simondon: the physical individuation of entropic becoming, embodied in the crystal; the vital individuation of the living operating through negentropic organogenesis; and the psychic and social individuation that occurs in anthropological exosomatization.

If that were the case, and it *probably is* the case, this would raise the question of the *wide diversity of* arrangements that can be imagined and that constitute *diverse new types of noo-organisms*, and of *mega-noo-organisms*, which might take on a wide variety of forms, from the digital anthill I described in 2004 in *Symbolic Misery*¹¹⁸ (three years before the appearance of the digital network that would concretize this hypothesis¹¹⁹) to new types of aggregations, more organically and organologically integrated (of which technological monsters in the style of *The Terminator* (1984) are the ‘cyborgian’ hypotheses), proliferating meta-noo-organisms of limited size: one can imagine anything.

Such imagination must be the result of a noetic dream, that is, a dream that is realizable according to the conditions of sufficient rationality, but also according to relations of force that are political, economic and ecological, thanks to which it may always turn into a nightmare, which we understand now more clearly than ever before.

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This must be imagined, precisely so that the new stage of exosomatization, leading to a second, industrial endosomatization, may also lead to the diverse proliferation of new territorialized forms, diversifications not just linguistic, religious, architectural, culinary, anthropophysical and so on, but locally reticulated and organized via new organological arrangements. All these will fall within a *fourth regime of individuation*, which will constitute *new forms of the noetic social body*, widely territorialized but not necessarily in a sedentary mode, given that there are also nomadic forms of territorial organization,

which may proliferate within larger territorialized organisms, often to their benefit – such is the case, for example, within our intestines, which play host to more than a kilogram of bacteria, and without which we could not assimilate the food necessary for survival.

It is therefore necessary to constitute an eco-neuro-geopolitics focused on the emergence of a new noesis, and to do so from the perspective *not* of the struggle for life, that is, for subsistence, which characterizes vital individuation, *nor* just the struggle for existence, which characterizes psychic and collective individuation, but, rather, from the perspective of the *struggle for consistence after the exhaustion of existences deprived, precisely, of consistence, by the fulfillment of nihilism*, as Nietzsche foreshadowed and of which what we are calling disruption is the concretization, as the final stage of the Anthropocene before the great ‘shift’¹²⁰ that is bound to lead either to the Neganthropocene or to the disappearance of noesis – along with the sixth mass extinction.

To struggle against this is precisely a matter of *not* delivering the new stage of exosomatization over to the market and its selection criteria, which are essentially entropic, and which constitute the trans-humanist project. It is instead a matter of struggling *for* the generalized enhancement of noetic potential at all organic and organological levels for new noetic organisms: such are the stakes of neganthropology, which posits that *noodiversity will be the key issue over the next few decades*, and that this will require a *noopolitics* to operate *above and below the emerging neuroindustry*.

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It is not a question, for me, of proposing some kind of assessment of the blessings or curses to be expected or feared from the endosomatization of technics itself, in particular at the cerebral level: the possibility of such an assessment requires the elaboration of its practical and theoretical conditions of possibility and impossibility, which have yet to be identified. But it is in order to begin such an identification that I would like here to sketch some outlines, which must *not fail to do justice to the excessiveness of what it is a question of thinking* – we must not, in other words, fold this thinking back into commonly agreed wisdom that avoids the issue, or, as we say in French, *noient le poisson*, drowns the fish.

For, in fact, the new stage of the process of exosomatization accomplished as a second, industrially-effected endosomatization raises the *question of the future of knowledge in all its forms* – knowledge of how to live, do, conceptualize, spiritualize, that is, interpret, and so on – in such a way that the ‘well-known’ (in Hegel’s sense) forms of

knowledge find themselves *destroyed, annihilated, devalued* and having to be *transvalued in totality*.

To recapitulate, our questions are the following. It is a matter of knowing:

- 1 if we are entering a new stage of psychic and collective individuation, or if, rather, we are coming out of this regime of psychic and collective individuation and entering into another *regime* of individuation, after the physical individuation of the crystal, the vital individuation of the living and the psychic and collective individuation of ‘technical life’;
- 2 if a *new political regime* can be conceived that will preserve in this new regime of highly pharmacological individuation the care and concern to protect neganthropy against computational entropy;
- 3 what conception of education is required, in the context of this second endosomatization, where education is understood as the noetic interiorization of new forms of knowledge, themselves inherently exteriorized;
- 4 what macro-economic revolution is needed to make this new regime of individuation solvent, a regime that is clearly also a new form of economy – and a general economy in Bataille’s sense as well as a bio-economy in Georgescu-Roegen’s sense.

. . .

For we who live in the twenty-first century, in the age of 11 September 2001, of 13 November 2015, of the COP21 climate summit, which was a dismal failure disguised as success, and of what we should describe as a disruption in exosomatization, the *question* is the future [*avenir*] insofar as it is not reducible to becoming [*devenir*] and cannot count on being – which has ‘become’ *Gestell* in the sense it was referred to by Heidegger in ‘Time and Being’¹²¹ and *Identity and Difference*.¹²²

What I have called the future – which I designate with reference to *Dasein* as it was existentially analysed by Heidegger, for whom it was above all constituted by its temporal ek-stasis, itself structured by the arche-protention of indeterminacy that is being-for-death, or *towards-death* – is not simply anticipation: it is what requires *Geschichtlichkeit* and *Weltgeschichtlichkeit*, and it is what, as *Entschlossenheit*, as ‘resoluteness’, which is also to say, as singularity, is capable of inscribing into becoming a *bifurcation*.

Such a bifurcation is what reason – or what the Greeks called *logos* – has as its *function*: I believe, like Didier Debaise, that here, Whitehead must be read with Simondon, and vice versa.¹²³

Since the nineteenth century, the conception of the universe as a whole has been radically altered by the thermodynamic account of the dissipation of energy. This state of fact did not just theoretically or philosophically transform the understanding we have of the world in which we live: it changed the ‘understanding that there-being has of its being’ *in its very banality* – particularly given that this banality, when it corresponds to what we call the Anthropocene, continuously increases the rate of entropy in the biosphere, and does so to a very significant extent – which amounts to a new form of the ‘banality of evil’.

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The (co)production of phenomena by intuition and the understanding, as Kant described this cooperation in order to specify the characteristics of noetic experience, is nevertheless conditioned by a hetero-condition, that is, a hetero-poiesis, and this is what Kant remained unable to think. It is, however, something of which Herder had a presentiment, and it involves an exosomatization that prescribes the ‘function of reason’ in Whitehead’s sense, as a speculative faculty that *operates* bifurcations. This is what follows from my argument about the role of tertiary retention in the *genesis of apodictic reason* – an idea that is taken up from Husserl’s ‘The Origin of Geometry’.¹²⁴

The question of tertiary retention is not anthropological but organogenetic: it is the stage of organogenesis in which it becomes organological and pharmacological exosomatization, which poses not just a question but a neganthropological problem. This problem is that of the *pharmakon* in which any pursuit of exosomatization consists.

The true question is that of noesis – which is accessible only intermittently [*par intermittences*]. And noesis must always and in principle confront the possibility of its non-human – if not inhuman – constitution. This is why Plato and Aristotle always relate this to the question of a god. In addition, noesis must always be capable of imagining, of fearing and of struggling against an inhumanized and de-noetized humanity, which is always imminent, and today more than ever.

The possibility of *de-noetization* is *constitutive* of noesis: it is the very ground upon which all noesis must be thought, and it is in this that it *first confronts itself* – in this *affront*. And hence it is that philosophy was born in struggling against sophistic stupidity – or against the sophistical exploitation of a certain stupidity inherent to badly

cultivated *logos*. This is why Deleuze can and must pose the question of stupidity, which he takes up from Nietzsche.

As an expression of the fulfilment of nihilism, transhumanism is a project of de-noetization, that is, of noetic dis-interiorization (of proletarianization, loss of knowledge – of the knowledge of how to live, do and conceive), and this dis-interiorization is founded on the delegation of noetic services to analytical artefacts and to interfaces designed to optimize interactive reaction speeds – as in the case of implants designed to optimize the reaction speeds of fighter pilots via optical fibres operating almost four million times faster than nerves.

From this perspective, transhumanism is the *anti-economic*, because *entropic*, culmination of proletarianization carried to its final extreme – which then, too, is entropic to the ultimate degree.

■ ■ ■

The noetization of the living is its exteriorization. The latter obviously does not begin with man, and it may not end with him. Nevertheless, noesis seems indeed to begin with the *promise* of man, and it seems it may go out with him insofar as humankind cannot think *itself other than as promise*, and as the promise of *Neganthropos*, builder of the Neganthropocene.

‘Man’, in becoming Anthropocenic, becomes not a wolf to man,¹²⁵ but the enemy of ‘humanity’ and life in general. As the ‘last man’, he is no longer able to think the *non-inhuman* being that he can be only as noetic – which he can be only insofar as he is in-existent: only insofar as he *does not yet exist*, only insofar as he exists *only as ‘not yet’*, always *already* having become anthropic, *all too* anthropic.

Noesis is what should provide the *criteria* for a noetic exosomatization that we also call the human, but where the human is not what is given but what must be produced, re-produced and reproduced, as I have argued elsewhere, through a commentary on Kant’s Transcendental Deduction.¹²⁶

The question of the promise is the question of the positive collective protention that alone allows the constitution of an epoch. The question of transhumanism is the question of an *absence of epoch*, in relation to which transhumanist ‘storytelling’ functions to conceal that this is the result of de-noetization, a de-noetization that transhumanism claims fills in for, or makes up for, a defect, a fault, a default, but where in fact the latter is precisely the origin of any noesis insofar as it participates in the neganthropic future that is non-inhumanity. The claim of transhumanism, that it makes up for a noetic flaw, resembles a discourse on the *perfect* human, that is, a project to *eliminate that flaw, that default, which is noesis*.

To start from the human, even as a ‘transhumanist’, is to always be on the verge of designating sub-humans, and of doing so by rejecting the improper, that is, the default. To posit that the human does not exist *yet*, or barely exists, on the other hand, as Derrida reiterated after Jean Jaurès in ‘My Sunday “Humanities”’,¹²⁷ is to confront *everything that we are* in our *daily inhumanities*, in our cowardice, our pettiness, our envy, our ambitions, our betrayals – everything that makes us other than gods, *we who think only by intermittences*, and who *live worthily* only by intermittences.

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In Heidegger’s final period, if we read it through the lens of Rudolf Boehm’s analysis,¹²⁸ which I unfortunately do not have time to discuss here, technics, an issue that runs through Heidegger’s entire oeuvre, eventually resurfaces in the 1960s as his final word. In this last word, which is *Ereignis* (the Event or the Advent), a fundamental step is lacking, a leap into ‘co-proprietation’, *inasmuch as what this amounts to is the question of entropy and of its negentropic reversal*, such that it therefore implies the need for a neganthropology, and such that it replays in their entirety all the questions of philosophy since its point of departure – which therefore demands that reason be rethought after Whitehead, reason that Whitehead himself calls a function beyond being, the latter having itself become *Gestell*.

This struggle is another name for *Sorge*, which must be understood in relation to the following statement by Georges Canguilhem:

Life tries to gain, to win out over death, in all senses of the word win [*gagner*], and firstly in the sense that a win is what is acquired by playing. Life is a play [or a gamble] against increasing entropy.¹²⁹

Like Nietzsche, Marx and Engels never knew the problematic of negative entropy, and hence this problematic leads today to taking a step beyond dialectics, beyond the dialectics of nature and beyond dialectics in general.

Faced with Lévi-Strauss’s assertion that human history amounts to an entropology, we tend:

- either to sink into metaphysical anti-humanism, that is, to ignore the play of entropy and negentropy such that one cannot overcome the other, which requires a new form of tragic thinking;
- or else to project ourselves towards the appallingly naïve (and nihilistic) temptation of proclaiming the necessity of

overcoming the human, and of doing so from, precisely, a transhumanist perspective, and in particular from a so-called ‘extropian’ perspective.

To confront the absolute need for a new age of negentropy, it is necessary to surpass anthropology, which, indeed, necessarily leads to entropy; and this surpassing of anthropology must pass through what Canguilhem called play (in a way that is close to Bataille), as the benefit of this *form of différance* that is play (but where Derrida himself always defined *différance* as the play of *différance*).

Transhumanism is an industrial strategy, and the most astounding, stupefying consequence of what we are calling *disruption*, a disruption that commenced in 1993.

The *situation* of disruption and *strategy* of transhumanism together constitute the new stage of exosomatization in which noetic organogenesis consists. Exosomatization is now generated according to the development strategies of the *lords of economic war without limit*, that war in which this disruption precisely consists and whose result has already been intense *de-noetization*. Only a neganthropology can constitute a *rational* critique of this situation and of the stakes of this war – with a view to an *indispensable and sustainable noetic peace*.

The question is the *reevaluation criteria* that must, therefore, be actively extracted from this nihilism, in order to effect a leap, not towards the overman, but towards *Neganthropos*.

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Stanislas Dehaene, in *Reading in the Brain*, describes the ‘neuronal recycling’ that was shown by Maryanne Wolf to be the condition of possibility of learning to read.¹³⁰ The consequence of this recycling, which programs the possibility of a deprogramming (and of what Paul Ricoeur called the ‘collapsed zones’ of genetic coding¹³¹), is that the *noetic* cerebral organ, that is, the brain *capable of questioning the truth and in return of transforming the world*, is perpetually in dialogue with the artificial organs that it creates – from flint tools to smartphones, passing of course through writing, and in particular the alphabetical writing that we ourselves have learned to read, and that allows us to be trans-formed by Proust during the passage to the act of reading.

The exploration of these vertiginous questions opened by Wolf calls for the mobilization of new resources that have been provided by palaeo-anthropology, especially through the problems posed by Merlin Donald, Kim Sterelny and Michael Tomasello, which must be brought

together with the way Jean-Pierre Changeux introduces the question of reading as taught by Stanislas Dehaene.

In the case of human beings, as Changeux points out, ‘the cultural cannot be thought without the biological and [...] the cerebral does not exist without a powerful impregnation from the environment’.¹³² Could we not, here, invert the perspective while modifying the trajectory? Ought we not, more accurately, speak *firstly* of technics, and of its organs, and of the relationship between technical organs and biological organs, before investigating culture itself?

This would make it possible to establish the conditions in which culture may appear, namely: on the foundation of a *transformation of organogenesis*, which, with the appearance of tools, becomes an exosomatization. And this would in turn make it possible to better situate cultural technologies themselves within a broader becoming. As Changeux himself highlights, reading and therefore writing belong to a field of cultural techniques or technologies that amount to ‘mental intermediaries’, a subject to which Ignace Meyerson, a founder of social psychology, was dedicated:

Culture should not be confused with writing [...]. People without writing still produced [...] mental intermediaries, or signs, to put it in the terms of Ignace Meyerson: works of art, whether visual or musical, ritual and symbolic systems, codes of conduct, essential [...] to the community life of the social group.¹³³

These mental intermediaries, in the reflection upon them that Lev Vygotsky, too, pursued throughout his whole psychology, enable the formation of what Gilbert Simondon called the transindividual, that is, meaning insofar as it is shared by noetic individuals belonging to the same group. And Simondon emphasizes that the condition of possibility of the transindividual is the existence of technical objects that support it and revive social sharing.

I have argued that these technical supports of the transindividual are tertiary retentions, that is, material exteriorizations of motor behaviours and mental contents that amount to an inorganic memory, external to the cerebral organ and the nervous system, but essential to its functioning from the moment it becomes noetic. To put it more precisely, tertiary retentions condition the play of primary and secondary retentions. What Maryanne Wolf shows, on the basis of an example taken from Proust’s *On Reading*, is the way in which these tertiary retentions are arranged and organized during the act of reading.¹³⁴

Among these tertiary retentions, there emerges indeed a particular class, which I call hypomnesic, and which are specifically dedicated

to the conservation and transmission of mental contents. Such is the case for writing.

Tertiary retentions in general are ‘inscriptions in material that is more stable than nervous tissue: mineral pigments, earth, wood, stone, ivory, [...] “there is no sign without matter”, as Meyerson wrote’.¹³⁵ Changeux stresses here that artificial retentions last beyond the fleeting impressions that traverse the nervous system and that are metastabilized in the form of neuronal connections in the brain, so long as the individual to whom the organ belongs remains alive.

Maryanne Wolf shows that the written text, which is the foundation of Western culture, presupposes a long work of transformation of the cerebral organ in order that it can be read and interpreted. This work consists in arranging the primary and secondary retentions of the reader with the play of those tertiary retentions that compose the book that is being read – or written. Here, *nothing* is reducible to biology: *everything* must be thought in terms of the composition of the organic and the organized inorganic, that is, of the tertiary retentional materials that form the organological milieu conditioning the survival of the organic-become-noetic.

This is also why Changeux urges us not to perpetuate the kind of confusion he sees in Steven Pinker:

Genetic disorders of spoken language [...] reveal the importance of genes like FoxP2, which some, such as Steven Pinker, are in a hurry to call ‘language genes’. Yet we find these genes in the animal [...], which doesn’t speak!¹³⁶

Changeux concludes that there are

processes of another type, of an ‘epigenetic’ nature, that make possible a strong alliance of genes and experience in the construction of cerebral complexity.¹³⁷

This alliance forms what I have called the epiphylogenetic,¹³⁸ that is, what André Leroi-Gourhan called the third memory,¹³⁹ and this radically changes the conditions of organogenesis, that is, of life itself qua evolution.

The margin of variability offered by an expanded genetic envelope [expanded by the ‘*cognitive games* of the newborn’] allow [...] an ‘appropriation’ of developing neuronal networks and their amplification in the form of ‘cultural circuits’. Novelty enters into the incompletely specified human brain through its genetic equipment, and so it is that reading is inscribed in the brain.¹⁴⁰

These considerations call for a new conception of pharmacopeia and pharmacology – which should be expanded to include *pharmaka* as understood by Socrates in *Phaedrus*, but where *Protagoras* showed that we must extend this notion to artifices and expedients of every kind, that is, to the whole of technics (and this is also what we learn from Canguilhem) – in the framework of a ‘pharmacology of processes of selection, amplification and reafferentation of interneuronal connections, both during development and in the adult’.¹⁴¹

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In his great work, *Gesture and Speech*, Leroi-Gourhan posits that human memory and its development cannot be studied independently of the evolution of its techniques. The genesis of the latter falls under what Leroi-Gourhan called a ‘process of exteriorization’, through which is formed an artificial memory essential to the functioning of the nervous memory of human beings. The prehistorian stressed that human nervous memory is not self-sufficient, and is, from the outset (more than two million years ago), augmented and conditioned by a social memory that is not organic but organological, with which it co-evolves.

If flint tools (and other tools that accompanied them, but which we remain unaware of because they have disappeared) are not made *for* the conservation of memory, they nevertheless *do* keep the trace of the gestures through which they were fashioned, and, in this way, they already constitute supports of memory: the cut tool in fact preserves the memory of the techniques of cutting, and this is why archaeologists can reconstruct them (through the methods of experimental archaeology). But the memory that is conserved in this way is gestural, not mental. It was only during the most recent periods of prehistory that mental contents began to be exteriorized.

The co-evolution of nervous memory and technical memory involved, according to Leroi-Gourhan, a series of stages, during which:

- 1 It is first and foremost the cerebral organ and its cortical organization that is transformed, the pace of the expansion of the cortical fan (that is, the formation of the cerebral cortex and its organization in the cortical regions) being directly correlated with the evolution of lithic tools.
- 2 The physiological evolution of the cortex was stabilized at the moment of the appearance of the Neanderthal, some 300,000 years ago, while the use of tools diversified

considerably, as if biological organogenesis had been replaced by exosomatic organogenesis.

- 3 In the Upper Palaeolithic, that is, in the epoch of cave painting, there appear the first forms of the exteriorization of mental contents, both as paintings and as inscriptions that anticipate what, after the Neolithic, will constitute the first forms of writing, ideogrammatic writing, until the appearance of the alphabet as we still know it today.

We ourselves care very much, in our day, about what will become of educational institutions, and about the difficulties they face in undertaking the formation of the younger generations for which they are responsible. We have cause to be concerned. If education is so fundamental for us and for our children, it is because, for each new generation, everything that has been learned by the preceding generations must, as much as possible, be appropriated by the new generation, and this is possible only on the condition that they first prepare their cerebral organ by submitting to that process of learning we call 'elementary', that is, that enables them to enter into the basic *element* of knowledge, which is, in this case, in the West, and for almost three thousand years, alphabetical writing – first handwritten, then printed.

Maryanne Wolf shows how this occurs: first, the acquisition of elements, followed by the acquisition of the knowledge derived from the reading that these elements make possible. And Wolf stresses that the 'reading brain' that was formed in this way was in no way originally configured for learning to read: 'we were never born to read', she writes.¹⁴² Neuronal recycling, which makes the noetic brain capable of profoundly disorganizing and reorganizing itself in order to interiorize the possibilities afforded by the artificial memorization that I call organology, is the condition of this exosomatic organogenesis in which consists the individuation of the technical organs that constitute an artificial milieu, and where the pursuit of evolution no longer occurs by submitting to biological constraints but through the individuation of social organizations.

This is why, beyond the scientific and epistemological stakes of her work, the research of Maryanne Wolf greatly opens up the question of a politics of the organology of the brain in the context of what we are calling the disruption, that is, an epoch of innovation in which exosomatization is now completely controlled by economic powers and subject to the constraints of short-term profitability. Hence we must hear the alarm sounded by *Proust and the Squid*, even if we must not unduly dramatize it: the 'digital brain', which is being organologically

transformed at a dizzying rate, raises the question of the preservation of a capacity for deep reading and therefore for deep attention. What is being referred to here as 'deep attention', however, is nothing other than the ability to reason by inheriting the experience of our ancestors and by making a worthwhile contribution to the fruitful growth of this heritage.

It is clear that nanotechnology multiplies these questions almost to infinity. Will we take care of the reading brain that is becoming the digital brain and ultimately the *endosomatically enhanced brain*, and will we do so without *losing* our reason, and our minds?

5 Passages to the Act, Dialogical Interactions and Short-Circuits in Interactivity

Before I begin the lecture properly speaking, I should clarify what I mean by what I will here call spiritual works, or works of the mind, without particular regard to this or that facet of spirit – *art, science, law, philosophy, literature, savoir vivre, savoir faire*, all this amounting to what I call spirit in the sense of $\nu\omicron\upsilon\varsigma$, that is, as that which is characteristic of what Aristotle called noetic souls. Spiritual works, understood in this way, are objects invested with spirit in Husserl's sense,¹⁴³ where this equally includes the book, the spoon and the temple,¹⁴⁴ and where such works

- work only for *interactions* under certain conditions (from which *applicatio*, as thought by Gadamer, stems, something that is cited by Pietro Montani),
- and work *in fact* only insofar as they introduce into entropic becoming a process that is not just negentropic,
- but neganthropic.

Having made this preliminary remark, I would like to emphasize that everything I will have to say in what follows should be set within the context of the entropic becoming of the cosmos, and I would like further to stress that life is what consists in deferring entropy, postponing its eventual outcome, including death, *Tod*, which is the specific arche-protention of the noetic soul, and which constitutes *Dasein* as *Dasein*.

It is in this way that the noetic soul is a *différance*. This noetic *différance*, however, cannot be dissolved into negentropic *différance* in general, which we can also call vital *différance*. And this is why I distinguish, within negentropy, what I call neganthropy, as that which generates noetic *différance*. Noetic *différance* is in this way a specific case of vital *différance*, into which it introduces a bifurcation – and I use this word in the sense simultaneously of Borges,¹⁴⁵ of what René Thom referred to as catastrophe,¹⁴⁶ and of dynamical systems theory.

The specificity of noetic *différance* derives from exosomatization, which began some 2.5 million years ago, in the wake of 'organic projection',¹⁴⁷ which commenced some 20 million years ago. In 1949, exosomatization was concretized as *Gestell* in the mind of Heidegger,¹⁴⁸ without this having the sense of neganthropy. In 2016 we are living

within what is now recognized as the Anthropocene, and we also know that *Gestell* could turn into the transhumanist project – even if, for Heidegger, *Gestell* would become ‘being itself’, as he wrote in ‘The Turn’.¹⁴⁹

We should note here that neither Hegel nor Marx, or Nietzsche, or Husserl, or Heidegger or Derrida ever acknowledged the immense cosmo-genetic upheaval that followed inevitably from the theories of entropy and negative entropy – unlike Bergson, who inspired the mathematician and economist Nicholas Georgescu-Roegen, the latter having in addition highlighted, after Lotka, the singularity of the exosomatic species when compared with endosomatic organogenesis.

We will see later on how and why these considerations open up the prospects and perspectives that will be developed in what follows.

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I responded enthusiastically to Pietro Montani’s invitation to contribute to this encounter, the central theme of which is the imagination, as something about which we can try to think on the basis of the unprecedented rise of so-called interactivity – which we should relate to what Antoinette Rouvroy called ‘algorithmic governmentality’.¹⁵⁰

The questions opened up by Pietro Montani and the organizers of this conference interest me a great deal, because they are situated within a path that I have myself attempted to trace ever since 1999, starting from the question of transcendental imagination. This has led me to a conceptual position that I will now summarize in twelve points:

1. I posited in *Technics and Time*, 3¹⁵¹ that the schema presupposes what I call tertiary retention, and more precisely hypomnesic tertiary retention, which begins in the Upper Palaeolithic, that is, with the first exteriorization (or exosomatization) of mental contents. Tertiary retention is exosomatized memory. It is called ‘tertiary’ because it conditions the relationship between primary retention and secondary retention, in the sense Husserl uses these terms in *On the Phenomenology of the Consciousness of Internal Time*¹⁵² – primary retention, which is also the synthesis of apprehension, being retained only on the condition that secondary retention seizes hold of it, and where secondary retention is itself the condition of the concept of understanding, which ‘seizes hold’ of the data of intuition, which is data only insofar as it is so seized.

The taking hold of primary retention by secondary retention involves a selection, and the latter operates according to the ways that

tertiary retention affords possibilities to secondary retention of ‘schematizing’ primary retentions – and, in so doing, of selecting them.

To say that the Kantian schema presupposes tertiary retention means in more general terms that we must think the *faculties* – of knowledge, desire and judgment – in terms of technical evolution, that is, according to these new exosomatic functions that are incessantly produced in the sur-natural and sur-realist history of humankind.

The exosomatic functions, which accumulate, assemble and combine into a system in the course of this sur-natural and sur-realist history, form a tertiary retentional milieu within which potentialities accumulate of what the Greeks called the Hades, and which are revenances, hauntings and spirits, all these being constituted by and inhabiting objects invested with spirit, including not just spoons but books, images, symbols and temples (which concurs with Simondon’s account in *On the Mode of Existence of Technical Objects*¹⁵³).

2. I have tried to show in *Symbolic Misery*¹⁵⁴ that libidinal economy is constituted *organologically*, as are all schemas and symbols, which require tertiary retentions such as the spoon and hypomnesic tertiary retentions such as the image or the book.

The history of the unconscious that the libido *economizes* (that it ‘saves’) is a history of the organological defunctionalizations and refunctionalizations that occur in the course of exosomatization, as Freud suggested in his correspondence with Fliess on 14 November, 1897,¹⁵⁵ when he introduced the concept of *organic repression* (which reappeared in 1929 in *Civilization and Its Discontents*¹⁵⁶), thereby showing that libidinal economy has its origin in the defunctionalization and refunctionalization of organs, and especially of the feet, the hands, the sense of smell and the eyes. Freud failed, however, to see the exosomatic consequences of what he had revealed, even though in *Civilization and Its Discontents* he does refer to the appearance of ships, the telephone and other industrial innovations.¹⁵⁷

3. I argued in *Disbelief and Discredit*¹⁵⁸ that all this falls within the realm of grammatization, which lies at the heart of capitalism and leads to calculation being privileged in all human affairs, and to the dissolving of singularities by analytical computation, instead turning them into particularities.

We should, by the way, be careful to note that we must understand all the twists and turns that occur in this history of grammatization (that is, what Derrida called the history of the supplement – which he himself never undertook), and that, on this score, we cannot simply remain content with the usual deconstructionist generalities.

4. In *Automatic Society*¹⁵⁹ I tried to deepen this analysis, by stressing the fact that digital grammatization, which makes algorithmic governmentality possible, results in a massive, generalized and systematic delegation of the functions of the understanding, and does so through an interactivity that, functioning four million times faster than nervous systems, thereby outstrips and overtakes them – and, at the same time, overtakes reason, which is to say, the synthetic function.

The faculty of knowing, the cognitive faculty, is indeed composed of functions: that of intuition, which is donation, that of the understanding, which is analysis, that of imagination, which is schematization, and that of reason, which is synthesis, which is also to say of interpretation, or in other words, bifurcation. In saying this, I am thinking in particular of Alfred Whitehead.¹⁶⁰

5. In my most recent book, *Dans la disruption. Comment ne pas devenir fou?*¹⁶¹ I have tried to show that all this requires a specific kind of *faculty of dreaming*, since it is a question of the dreaming of ‘realizable’ dreams, and hence precisely of *noetic* dreams, on which Paul Valéry (but also Walter Benjamin) gave us cause to meditate.

I have myself referred in this context to Hayao Miyazaki’s film, *The Wind Rises* (2013), to show why such dreams are both pharmacological and organological: they lie at the origin of the exosomatic organogeneses that constitute our material history – and this means both that it is always possible for noesis to turn into a nightmare and that *pharmacological arbitration* (that is, the *therapeutic capacity*) is the function of reason insofar as it judges cognitively, sensibly and morally.

6. What I am trying to show in my current seminar is that there is a *functional becoming* of the ‘cognitive faculties’ as of the faculties of desiring and judging, a development that *functions* according to those *defunctionalizations* and *refunctionalizations* constantly induced by hypomnesic tertiary retention.

This is what Heidegger failed to understand when he lamented the change of the meaning of truth effected by Plato in Book 7 of *The Republic*, where ἀλήθεια (*alētheia*) becomes ὀρθότης (*orthotēs*) – which foreshadows Kant’s division of the cognitive faculty into an analytical capacity (the understanding) and a synthetic capacity (reason) – and does so on the basis formed by Descartes’s *Rules for the Direction of the Mind*,¹⁶² which itself paves the way for Leibniz’s ‘Characteristic’,¹⁶³ that is, the basic concepts of information theory qua mathematical automation, the pharmacology of which was examined by Husserl in *The Crisis of European Sciences*.¹⁶⁴

7. It is this metaphysical misunderstanding that led Heidegger to his frightful discourse on *Gelassenheit*, in which he lauded rootedness in the earth – a discourse all the more frightening in that it contains a prophetic aspect, when he asserts that, in the future,

there could arise, hand in hand with the greatest ingenuity in calculative planning and inventing, an indifference towards meditative thinking, a total thoughtlessness.¹⁶⁵

8. What constitutes the faculty of dreaming – while ensuring that it generates only *pharmaka* – is ὑβρις (*hubris*), which means that νόησις (*noēsis*) in actuality always borders on a passage to the act of madness, and it is this that connects Laocoon to the snake ritual.

9. The disagreement between Foucault and Derrida concerning madness and its relationship to reason stems from their mutual neglect of the real stakes of Cartesianism,¹⁶⁶ which lie *not in the opposition between reason and madness*, but in the 15th and 16th rules of the *Rules for the Direction of the Mind*,¹⁶⁷ which pave the way for what – passing through Leibniz, Babbage, Lovelace and the industrial concretizations of the exosomatization of the functions of the understanding (which begins with mechanography¹⁶⁸) – will lead to what we now know as ‘big data’ and the ‘data economy’.

The latter prepares the path for the transhumanist delirium that our hyper-pharmacological reality could indeed become, while the Cartesian *Rules* made possible what we now refer to as the Anthropocene.

10. In 1936, in ‘The Origin of Geometry’,¹⁶⁹ the object invested with spirit became, for Husserl, the *hypomnesic* condition of apodictic anamnesis – and this was not without consequences for anamnestic processes of *all kinds*, and in particular those that Aby Warburg traced in the works of the Renaissance – and which led in 1923 to the lecture at Kreuzlingen where the issue was the *pharmakon*.¹⁷⁰

11. We are living in the year 2016. What presented itself in Warburg’s time as the possibilities (and impossibilities) of that analogue form of tertiary retention that is the photograph today presents itself – and, as ever, and in the same movement, *absents* itself – as the possibilities (and impossibilities) of digital tertiary retention, for which interactivity, which analytically short-circuits synthesis, and which we also call the ‘virtual’ in the belief that this is something we can oppose to the real, is the key fact that remains to be ‘care-fully thought’ [*panser*].¹⁷¹

To think the virtual in the epoch of interactivity is firstly to think *interaction*, that is, to rethink dialogism, in the sense of Socrates

(before the dialectic) and also of Bakhtin, and it is to rethink the *virtual* in Bergson's sense *as well as the unconscious* in Freud's sense, *individuation* in Jung's sense, the *transitional object* in Winnicott's sense and *Pathosformel* in Warburg's sense, *on the basis of the facts of exosomatization and the tertiary retention that stems from it*, in particular as *hypomnesic retentions and anamnestic objects*.

12. Every work is a *pharmakon* insofar as it is *contingent, accidental*, and hence insofar as, as a *lesion of meaning*, it inaugurates a *new age* of meaning: a *necessity, a wound* that I am becoming – as did the poet Joë Bousquet, for example, or the musician Django Reinhardt, and so on.¹⁷²

This is what Warburg experienced of Laocoon in the Hopi ritual up until his madness returned, almost thirty years later, in Kreuzlingen – and on an immeasurable scale, where the *metron* of art exceeds itself in *hubris* and euphoria, the exosomatic ground of which is *tekhnē*.

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At the heart of these questions is the function of imagination – which must be thought in terms of exosomatization, and as what *realizes* dreams, that is, as what the unconscious exteriorizes by giving it form [*donnant corps*], as the spatialization of time in the form of tertiary retentions, and as the condition of the social cohesiveness [*faire-corps*] of those exosomatic organizations that are human societies, that is, as organic solidarity and noetic *philia* (for there is also a *philia* of those beings that are *aloga* – without *logos* – that for Aristotle are the animals).

(We don't currently have time for a question that deserves to be pursued patiently and in depth, and that was raised by Michel Foucault when, while still young, he contributed to awareness of Ludwig Binswanger and *Daseinsanalyse*, arguing that in *Dream and Existence* Binswanger made the dream *the source of freedom* – that is, of noesis: 'the dream discloses [...] the point of origin from which freedom makes itself world'.¹⁷³ It would clearly be necessary to read this alongside an interpretation of *Imagination et invention*,¹⁷⁴ the lecture course by Simondon, who, in 1954, followed the same seminars and classes as Foucault – and in particular those of Canguilhem and Merleau-Ponty. And it should be noted that Foucault would, in his 1971 response to Derrida concerning Descartes, make *dreaming, conceived of by Descartes as meditation*, the essential issue of his reading of the *Meditations*.¹⁷⁵)

The *accumulation of tertiary retentions*, as the *accumulation of realized dreams* – but where these dreams also and always remain

unrealized, that is, never enough, insufficient, disappointing, because they are pharmacological, and always call for a new exteriorization, and, therefore, an *applicatio* – this accumulation of realized dreams, of which Rome is as it were the capital, calls for and makes possible other dreams. Having said this, I will continue with the general argument of this symposium – and do so as a kind of *applicatio*, in the sense of Gadamer and as discussed by Montani.¹⁷⁶

In all this, what has still not been thought, nor therefore understood, is the question of entropy and negentropy – which was raised by Nicholas Georgescu-Roegen through the introduction of the concept of exosomatization.

A work [*oeuvre*] is *first and foremost* an exosomatization. And, as such, that is, insofar as it works, and therefore functions, it *bifurcates from every expectation*: it is the *applicatio* of the unfulfilled or incomplete noetic dreams that it realizes while *surprising them*. This surprise, this *sur-prehension*, which is also the question of reflective judgment, or, in other words, of the play of imagination and understanding, is what works by *bifurcating*, that is, by *exceeding* comprehension, or, again, by *exceeding the understanding*, and as a synthesis *beyond any possible analysis*, which is to say as reason, or, equally, as neganthropy.

What, in neganthropy, creates faults and defects, defaults that themselves work, that are works, and hence that exosomatize themselves as that which is necessary, *as necessity*, is *hubris*.

What works in this way – that is, reflexively, as the *community of the default of community*, as Bataille would say, as the *sensus communis*, and as *that which founds while unbounding*, so to speak, what Esposito calls *delinquere*¹⁷⁷ – is also the *expectation of the unexpected*, which always contains an echo of the *anelpiston* of Heraclitus,¹⁷⁸ and which is inscribed in the arche-protentional horizon of what *Being and Time* calls *Sein zum Tode*.

What I am trying to do today, on the basis of these non-Kantian readings of Kant and non-Derridian readings of Derrida, essentially involves the following:

- 1 Reviving Whitehead and Canguilhem from the perspective of an exosomatic conception of noetic life, which I call a neganthropology, and doing so in order to find a way out of the Anthropocene, and to find a way to *enter into the Neganthropocene* – which are the stakes of what Heidegger called the *Ereignis*.
- 2 This also consists in *thinking Canguilhem's biology* and, more generally, *Whitehead's reason as functions of life*

– against death, but also towards death, *zum Tode*, and through *the* dead, that is, within a life that is what Derrida would come to call *life/death*, which is also what underlies the *life and death drives*, that is, negentropy and entropy, where *the dead*, that is, *the mortified and exosomatized knowledge that is artifice*, in all its forms, like *all* objects invested with spirit, that is, all works, *all this* is in 2016 *submitted* to what, in Marx, and in the epoch of industrial capitalism, had already become ‘*fixed capital*’, which is now *automated*, as anticipated in the *Grundrisse* – automated, that is, *interactive*.

3 This ultimately consists in trying to think biopolitics, on the basis of which it is a matter of thinking a *bioestetica*, in such a way that:

- such a biopolitics cannot fail to be inscribed in the wake of the sometimes inflammatory thought of the *vital functions of knowledge in Nietzsche*, and in the wake of the will to power, which calls for a ‘great politics’ and a ‘great health’;
- such a biopolitics cannot avoid *specifying what characterizes it in comparison to endosomatic life*: there is biopolitics only to the strict degree that there is *artificial selection*, that is, *art*, in this very general sense by which we translate the Greek *tekhnē* into the Latin *ars*, which is what Foucault does not enable us to think *unless we go back to the Foucault of 1954*;
- such a biopolitics must confront the bio-economics of Georgescu-Roegen, precisely insofar as it *makes economy into a question of the functional organology of exosomatization* from the perspective of a *cosmic function in entropic becoming* and as the *différance* of this entropy, noetic *différance*, which is, therefore, a neganthropy, and which raises the question of a locality that would be, not rooted in the earth in the sense promoted by Heidegger in Meßkirch, but, precisely, and completely otherwise, exosomatic, that is, artificial, and as such artistic – of which the question of *Gestell* is the avowal that is yet to be assumed.

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I am aware, of course, of the insistence of the argument of our encounter on the primordially political dimension of such questions. This leads me to emphasize that *interactivity first presents itself, in everyday life, and in the consolidation of its various effects, as automatic society*: this refers *above all* to all those *automatons* that interactivity inscribes into all layers of everyday life.

And here we must return to Simondon's concept of the *associated milieu*, in order to show how *crowds have become technical functions associated with a technical apparatus*, so-called *Gestell*, for which these crowds would be the *Bestand*, in such a way that this 'associated milieu' (contrary to what Simondon's non-pharmacological reading allows one to believe) becomes *inherently entropic*, because the interactivity of the understanding, exteriorized in algorithms, outstrips and overtakes both the imagination and reason, after having suspended intuition. Hence it is, then, that this reticulated milieu in fact becomes a *systemically dissociating milieu, because it is hyper-proletarianizing*.

Having myself stressed for ten years, by drawing on the case of 'free software', that interactive digital networks may well harbour the possibility of constituting networks of associated milieus (in the sense given to this phrase by Simondon to describe, not only the Guimbal turbine, but the articulation of the individual and its memory as always already transindividual and social), and that such networks thus open up the possibility of overcoming the dissociation and proletarianization imposed by the industrial and functional division not only of labour but of the functions of consumption and production, I cannot help but note that what we see realized today with social networks is, on the contrary, the rise of the digital anthill – which is the very scenario about which I sounded a warning in *Symbolic Misery*.¹⁷⁹

In the data economy, the individuals who are aggregated into crowds *lose all their protentional capabilities*, and, through that, all their goals, that is, all their reasons for hope. This is so because the algorithms that collect and analyse retentions, on platforms that systematize this collection, do so four million times more rapidly than individual nervous systems, and thereby produce automatic protentions that short-circuit every faculty (of knowing, desiring and judging) by liquidating all ends and all reasons for hope: the subjective imagination is short-circuited by objectivated e-machination, so to speak, that is, by what Marx called fixed capital, or, in other words, by a calculation that outstrips and overtakes the synthetic capacities of reason *by neutralizing the faculty of dreaming*, which is also to say of meditation in the sense of Foucault reading Descartes with Binswanger. We note here in passing: reason is the faculty of the

realization of dreams supplied by the imagination – which, with the web, became e-machination, beginning twenty-three years ago.

These are the stakes of what I have tried to describe in my *applicatio* of Jonathan Crary's 24/7 capitalism, '*capitalisme à l'assaut du sommeil*',¹⁸⁰ a capitalism that disintegrates the dream – and, in this regard, the most interesting moment of this book is Crary's reading of Chris Marker's film, *La Jetée* (1962).¹⁸¹

Here, the problem is not the automated abstraction of the protentions provoked by digital grammatization. The problem is *us*, insofar as we are incapable – after Heidegger but also after Derrida, Deleuze and Lyotard, as well as so many others outside of France – of thinking these processes. And, consequently, the problem is our abandonment of any political or economic prescription of a therapeutics.

It is hypomnesic tertiary retention that, since the Upper Palaeolithic, and in all its forms, constitutes both: (1) the schemas through which the understanding seizes hold of the data of intuition; and (2) symbolization as a tertiary protention that infinitely projects the necessity of an end that makes a *différance*, by building a bridge between aesthetics and morality above and beyond the understanding of the faculty of knowing.

Every work is this kind of artificial – that is, exosomatic – matrix of tertiary protentions, which themselves effect a process of artificial selection, which constitutes a transindividuation process in which there occurs a *Pathosformel*. The stakes of these questions are, today, economic and political, to the extent that purely computational artificial protention liquidates the imagination – that is, the possibility of a noetic *différance* that produces neganthropic bifurcations – by short-circuiting the faculty of dreaming.

To this we must oppose a new economic and political rationality that creates a process of production in a broad sense – in the sense of the noetic, exosomatic enlargement that began in the Upper Palaeolithic with *Homo ludens*, through rupestral projection and in the awakening of nascent noetic dreams – a system of neganthropic bifurcations of every kind, founded on works of every kind, including works of art.

We lack the time now to present this new process of production. It rests on the following principle: the imagination is the neganthropic principle that projects realizable noetic dreams in order to combat the pharmacological becoming of those dreams realized in the form of those tertiary retentions that are the schemas of this vast *oneirology*, of which the serpent ritual and Laocoon were unforgettable figures in the mind of Aby Warburg, impressed by the secret knowledge of the *pharmakon* that, throughout the ecumene, feared and expected the *hubris* of which the *Pathosformel* would be the protean expression.

Had there been time, I would have explained that it is therefore necessary to place the automated analytical faculty into the service of a reconstruction of the figure of the amateur, that is, into the service of noetic intermittence as the capacity for dis-automatization, and to do so in such a way that it forms the basis of an economy that would be founded on that resource allocation program that in France is known as the *intermittents du spectacle* scheme.

Thank you for your no doubt intermittent attention.

6 Welcome to the Anthropocene: Text for an Encounter between Bernard Stiegler and Peter Sloterdijk

Before I propose a few points for discussion with Peter – themes I have taken up in my most recent book, *Dans la disruption. Comment ne pas devenir fou?*¹⁸² – I would like to sketch out my current approach, which I adopt along with pharmakon.fr, Ars industrialis, the Institut de recherche et d'innovation and the Chair of Contributory Research of Plaine Commune, within the frame of which everything I present here will be inscribed.

Along with these groups, I argue that the Anthropocene is unlivable, insolvent and unsustainable, and that it is therefore an Entropocene, which is to say that it implies a turn, a turning point, a detour, *ein Kehre* that, as *Ereignis*, turns into what we call the Neganthropocene.

Such a perspective obviously involves taking up the thermodynamic theme of entropy, and of what, in biology, in order to avoid the risk of substantializing entropy and its variations, whether they are conceived as dissipative structures or as negative entropy in Schrödinger's sense, we call *différance*, which must be 'différentiated' into, on the one hand, vital *différance*, and, on the other hand, noetic *différance*, which is also an exosomatic *différance* that calls for a neganthropology.

Neganthropology is a response to the impotent thought of the last man formulated by Lévi-Strauss in the final chapter of *Tristes Tropiques*,¹⁸³ and against which I have begun to argue by taking up Georges Bataille and his question of sumptuary expenditure. This general economy integrates political economy – and its dis-economy – into libidinal economy, which I conceive here *with* Freud and *after* Freud, that is, *beyond* Freud, and beyond not just the pleasure principle but *Moses and Monotheism*.¹⁸⁴ What Freud fails to understand is the question of exosomatization and of what it introduces into the economy of life and death as the play of entropy and its *différance* within the psychic apparatus, irreducibly inscribed as it is within a social apparatus. This is what Simondon made clear, even if he himself had little understanding of Freud. *Différance* is always negentropic, if it is true that negentropy is always what differs and defers entropy.

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Having recalled all this, I will add that the central thesis of *Dans la disruption* consists in arguing that Foucault's gesture in *The History of Madness*¹⁸⁵ should be interpreted through a reading of his introduction to Ludwig Binswanger's *Dream and Existence*,¹⁸⁶ which we should see partly in terms of the work of Marc Azéma, a French archaeologist who showed not only that we can access the dreams of the people of the Upper Palaeolithic through their rupestral projections, but that this amounts to what Azéma calls prehistoric cinema.¹⁸⁷ I myself have argued that the syntheses of the Kantian transcendental imagination and the schematism become possible only through the exteriorization of what I call tertiary retentions,¹⁸⁸ and, in particular, the hypomnesic tertiary retentions that appear with the decorated caves of rupestral painting. This amounts to the beginning of grammatization, that is, of reproduction making the continuous discrete, which it does by spatializing temporal mental contents – this is also the thesis that Husserl puts forward in 'The Origin of Geometry'.¹⁸⁹

Conceived in this way, exosomatization – which for Nicholas Georgescu-Roegen was the *condition* of the economy, replacing biology, and which must be thought starting from the 'law of entropy' – is what results from the realization of noetic dreams, those dreams referred to by Valéry, which are noetic only inasmuch as they are realizable, that is, exteriorizable, for example in the form of hypomnesic tertiary retentions – and this is precisely what Descartes formulated in Rule 15 of his *Rules for the Direction of the Mind*, and in Rule 16, which is most likely what inspired Husserl's discourse on the origin of geometry – whether consciously or otherwise.¹⁹⁰

In his response to Derrida, Foucault argued that, contrary to Derrida's claim that the dream is a generalization of the question of madness, Descartes made the dream the condition of meditation in the sense of the *Meditations*. I believe that Foucault's argument here is entirely justified. But both Foucault and Derrida ignore Rules 15 and 16, through which Descartes played his part in setting up the madness of the Anthropocene, that is, the hubris through which calculation will allow – with capitalism, and through the process of disinhibition in which, according to Peter Sloterdijk, it consists, whose work I will discuss here all too briefly – the installation of the Anthropocene as an exorbitant and unsustainable increase of entropy, an excessiveness that is, today, that hubris which makes all of us go a little crazy – because arche-protection has been twisted in a striking and unprecedented direction. Arche-protection: which for Heidegger is being-for-death, although Heidegger never understood how taking the law of entropy into account would have completely changed his account of the history of being and its epochs.

Indeed, Heidegger says absolutely nothing about thermodynamics or about its second law, nor does he discuss negative entropy, which, according to Schrödinger, is life. And Derrida, too, whose path is tied so closely to Heidegger, himself has nothing to say about this, even if it is true that *différance* speaks of little else – while Marx, Engels and Nietzsche will all have denied its scope.

Nor did Heidegger see that meditation, which forms the stakes of *Gelassenheit*, presupposes calculation, *just as negentropy presupposes entropy*. To understand the Anthropocene from the neganthropological perspective that results from such considerations is to redefine *Gestell*, the *Kehre* and what, starting from the becoming-*Bestand* of every resource, it should have the ability to produce as *Ereignis*. To understand the Anthropocene from a neganthropological perspective is, then, to redefine all this in terms of neganthropic bifurcation, recalling that a bifurcation is also, in the mathematics of catastrophe theory, that which generates a new stage in morphogenesis.

Transhumanist delirium is an ideological exploitation of these tendencies, which are themselves in no way ideological, and this discourse, which is also a disruptive strategy for which the Singularity University is one key institution, is what we must fight against at the precise point where it absolutely fails to see that the singularity is precisely *not* anthropological, but neganthropological.

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In the age of disruption, the technical system, which permanently changes beyond all limits, amounts to an extreme stage of a process of disinhibition that began in the fifteenth century, as shown by Peter Sloterdijk,¹⁹¹ and also by Jean-Baptiste Fressoz.¹⁹²

Disruption amounts to a radicalization of innovation, one that prevents any metastabilization with the other systems that constitute the social *body*, destroying in advance any capacity they might have of adopting the technical system,¹⁹³ or of controlling its effects. In so doing, it constantly increases the massive capital accumulations that result from placing ‘disrupted’ sectors outside the law: disruption is above all the creation of legal and theoretical vacuums – what I call Wild West technology.

All this is an extension of what, in *In the World Interior of Capital*, Sloterdijk describes as the five hundred year old process of disinhibition lying at the basis of capitalism and globalization. Consisting essentially in outstripping and overtaking social organizations, and, through that, in short-circuiting collective individuation and transindividuation, disruption is *based* on the destruction of all psychosocial structures. It can only generalize and radicalize disinhibition,

that is, the unbinding of Eros and Thanatos that was already the issue in what, in 1944, Adorno and Horkheimer foresaw in terms of the culture industry.

With these new barbarians who are the disruptors, who seem perfectly willing to identify themselves as such, and who are the heirs of the buccaneers and pirates whose history Sloterdijk studies, this radicalization stems from the purely computational treatment of the traces left by individuals and groups who have been radically disindividuated and radically harmed.

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Jean-Baptiste Fressoz recounts how the taking of crazy risks has become not only possible but systematized, in order to struggle against those who would resist, and to ‘make reasonable’ what has in fact become a public opinion fabricated by techniques designed for the construction of this opinion and totally dedicated to that purpose – until, today, all this seems to have been upended.

We know today how this systematic risk-taking was made possible by a fundamental transformation of Christianity, which coincided with colonization, the latter contributing, as Peter Sloterdijk has shown, to the development of the process of disinhibition. All this fundamentally complicates the Foucauldian schema of the history of madness in the classical age, and shows that this is where the roots of contemporary madness are to be found.

By reading Sloterdijk and Fressoz, it becomes possible to see the history of modernity from a very different angle than that adopted by Foucault: ‘modernity’ proves to be, above all, an immense process of disinhibition. Anthropotechnical modernity, the outcome of which is the Anthropocene, is what establishes the *retentional* dimension of madness, that is, of ὕβρις (*hubris*): Rules 15 and 16 pave the way for digital tertiary retention, the axiomatic bases of which were formalized by Leibniz with his Characteristic¹⁹⁴ – this being the very thing that neither Foucault nor Derrida were able to see.

While he constitutes the certainty of the *cogito* as the experience of doubt and the evil demon, Descartes effects the ‘great division’ described by Foucault, for whom Voltaire is the best example. In this Cartesian *denial* of madness as the condition of reason, it is the *age of contemporary madness* that prepares itself through the forgetting of the *pharmakon*, and precisely of its pharmacological character, as the denial of this character: a denial prefiguring and engendering madness.

The denial of the irreducibly pharmacological dimension of modern technics, founded on disinhibiting calculating technologies and

leading to the disruption, constitutes the ὕβρις of the modern will *and beyond* – and well before Descartes. This is why Sloterdijk can write:

The Portuguese and Spanish expeditions could never have been undertaken without motivating systems of delusions to justify these leaps into the unclear and unknown as sensible acts.¹⁹⁵

In other words, if it is true that Descartes excluded madness from reason, and in fact from unreason (on which Derrida casts doubt), a gesture that would, according to Foucault, be characteristic of the classical age, organizing and concretizing this exclusion through the ‘great confinement’ of the mad and the deviant, Peter Sloterdijk shows that the modernity of the Modern Age is based instead on triggering a new kind of madness through exporting the West as an extra-territorialized barbarism.

Through the *immense process of disinhibition characteristic of capitalism and installing the Anthropocene, madness becomes the norm* that justifies rationalization – and ‘rationalization’ must here be understood in the sense, simultaneously, of Weber, Adorno and Freud.

The articulation of disinhibition (that is, of madness), and of the calculability characteristic of the classical age and its reason as *mathesis universalis*, is a kind of antithesis of the processes described by Foucault – which we might be tempted to conclude lead on the contrary to the systematic reinforcement of inhibition, both through ‘morality’ and through the criminalization of deviance: this is Foucault’s theme in *History of Madness*. These two phenomena, of course, are obviously not contradictory: rather, they feed off each other – even if they do result from a dynamic of tendencies that *are* contradictory and that tertiary retention always sets up, this being precisely what makes it a *pharmakon*. This dynamic of inhibition and disinhibition feeding off one another constitutes an *organology of temptation* for which the monotheisms are curative attempts that, by turns, turn out also to be toxic.

This capitalism and this economy of disinhibition can become industrial only by combining with the great turning point that is the Reformation, where, in dissonant counterpoint to the puritanism that unfurls with Calvin, a process of disinhibition unfolds through the succession of disadjustments that eventually lead to the current stage of the Anthropocene that is disruption. The latter is a *total disinhibition* and, as such, and paradoxically, a kind of totalitarianism, apparently ‘soft’ but in reality extremely violent: a violence (which is just beginning) that encompasses every realm – verbal, moral, sexual, policing, economic, delinquency, terrorism and so on.

Behind the acts of madness that make history, such as those of the explorers whom Sloterdijk discusses, as well as all the campaigns of conquest undertaken by ‘historical figures’, it is always also and always *firstly* a matter of tertiary retention in a broad sense: in the sense that *every form of technics* is a tertiary retention, that is, a *pharmakon*. Bearing technological epokhalities or borne by them, a new tertiary retention always reopens, in one way or another, the dehiscence in which ὄβρις consists, and within which alone can occur that process of disinhibition whose history and economy Sloterdijk undertakes to examine.

From a Sloterdijkian perspective, the *certainty* that the foundation of the Cartesian subject is supposed to provide, far from dominating the classical age, in reality opens a space for risk-taking, for calculations of probability and for insurance mechanisms of all kinds, which *rationalize* the *new ordinary madness* of the conquerors, and which characterize the way that capitalism is accompanied by and consists in *immense uncertainties*.

This process of disinhibition requires, in the first place, globalization itself, that is, the conquest of the high seas, where piracy played a key role – even though evangelizing missions accompanied these campaigns in a dynamic process conquering both minds and territories. The advent of the culture industry and its various wireless networks, and today the data economy and its digital networks, has obviously transformed the nature of this globalization.

Thirty years after Adorno and Horkheimer, all the consequences of decolonization unfold as the beginning of the ‘crisis’, which would profoundly transform the structures and goals of capitalism, until the advent of Hayekian ultra-liberalism, which advocates total disinhibition, glorifying hacking (but in a very peculiar way) – hacking, that is, piracy (the ‘hacktivists’, many of whom I count as friends, prefer to present themselves as so many Robin Hoods rather than as pirates, in the belief they are realizing the dreams of Hakim Bey at the very moment they are actually serving the cause of Hayek).

Sloterdijk exposes a *propensity to madness* characteristic of the whole Modern Age and beyond, of which the classical age would be a key stage of development, and *on the basis of which* capitalism would eventually undergo, in America and in the twentieth century, a fundamental evolution:

Columbus was an agent of a pan-European willingness to embrace delusion – though it was only psychotechnically perfected by the USA in the twentieth century (and re-imported to Europe through the consultancy industry).¹⁹⁶

This analysis of the ‘consultancy industry’ completes the Adornian perspective on the culture industry: the well-known conflict between Habermas and Sloterdijk should not cause us to forget that Sloterdijk’s analysis extends the claims of Adorno and Horkheimer in *Dialektik der Aufklärung* – even if they argue on a very different register.

The current ‘consultancy industry’, which we must conceive in terms of a fundamental relationship with the absolutely computational capitalism of algorithmic governmentality, constitutes, first with the culture industry and now with the data economy, a totality that is formed from out of ‘the activity culture of modernity’.¹⁹⁷ This activism emerges at the dawn of modern times with those *madmen who are the explorers, pirates and swindlers* [*chevaliers d’industrie*] who establish, through colonization, but on a much broader scale and within cities, an ‘organization of disinhibition’, thanks to which the whole ensemble of social structures begins to transform.

In this highly complex and often paradoxical process, the response of Ignatius of Loyola to the Reformation, conducted according to his *Spiritual Exercises* – which fall within what Foucault called techniques of the self – prefigures, according to Sloterdijk, the development of the psychotechnics that will be essential to globalization, from colonization until today:

As an explicit attempt at psychotechnical and medial modification, Jesuit subjectivity was driven by the longing to understand the successes of the Protestants better than the Protestants themselves. [...] The first subjects of the Modern Age [...] were [...] the Jesuits.¹⁹⁸

Just as spiritual exercises can lead to their opposite, namely, to psychotechnologies in the service of what has been described today as an economy of attention, which is in reality a *destruction* of attention (its *dis-economy*), so too what seems to constitute the speculative or transcendental sphere of the life of the mind (or spirit) in *otium* in reality works (without knowing it) for the establishment of the hegemony of *negotium*:

The dominant figure of modernity is thus by no means the excess of reflective inwardness [...]. What becomes manifest in the process is that the task of reflection is to prepare the desired disinhibition.¹⁹⁹

Such an idea can be interpreted in many ways. For myself, it seems to express the dynamic involved in what I refer to as the doubly epokhal redoubling, that is, when, due to some exosomatic innovation that succeeds in generating a new technical system, there is a suspension

of circuits of transindividuation, for the epoch in which this new exosomatization occurs, so that it is only through a *second moment* of this double redoubling that new circuits of transindividuation can be elaborated. This was the case, for example, for the new circuits of transindividuation that arose with the Republic of Letters and modern philosophy (from Descartes to the Kantian *Aufklärung*), where the ‘task of reflection’ is to trigger the technological and scientific epokhality of the next stage – which has the paradoxical result that the ‘owl of Minerva’ arrives always too late, long before the disruption.

As Hegel taught at the moment when exosomatization suddenly accelerated into machinic becoming (the first steam engine arriving in Berlin in 1795) – thereby inaugurating the Anthropocene era – *the life of the mind is the life of its exteriorization*, through which the mind enters into a contradiction with itself that Hegel believed to be dialectical.

As for we ourselves, what we learn from *disruption* is that *this becoming is not dialectical, but tragic*, that is, *pharmacological*. This is what Foucault sought to grasp but without success, having failed to conceive ὕβρις in a tragic way (just as, very strangely, *The Birth of the Clinic*²⁰⁰ overlooked the industrial pharmacopeia and pharmaceutical-chemistry that turned health into a market – just as Google is doing now with the digital industry – even though Foucault’s teacher, Georges Canguilhem, did indeed raise the question of drugs and of their place within care).

Sloterdijk shows how disinhibition results from the delay and advance that plays out in the exteriorization that we are here calling the doubly epokhal redoubling. It is in this way that disinhibition constitutes the condition of possibility of the Anthropocene and of the passage to limits that has already led this era to a critical turning point. Disinhibition is what leads to the authorization of committing crimes: it is this that became clear to Dostoyevsky at the Crystal Palace.

It is starting from this relation to crime (to ὕβρις), and as the extremity or radicalization of disinhibition (in the epoch of what, in the world of Dostoyevsky, one refers to as nihilists), that Sloterdijk conceives innovation and what will become the economic theory of ‘creative destruction’, all this conceived as *theory of progress*, which is also to say, of *disadjustment*²⁰¹:

Two generations after Raskolnikov, Joseph Schumpeter would state in his theory of economic development that in economic life, functionally speaking, there are ultimately only innovators and imitators.²⁰²

This state of fact was established, then, by the systemic organization of disinhibition in which capitalism consisted at the dawn of the Modern Age, an organization that resulted from new regimes of the doubly epokhal redoubling, all of which seems, today, after the fact, to have reached that critical threshold of the Anthropocene we are calling the disruption. But, from this, we must not conceive a 'naïve ontology of progress in which the distance between the vanguard and the main body can consistently be interpreted as the pilot function of those at the forefront'.²⁰³

Those at the forefront, in other words, have no use, therefore, for those who lag behind, for those who are 'late': the former are the pirates and criminals who mercilessly clear out territories for disinhibition, without the least regard for what might otherwise have remained of 'civilization' – which, coming always too late, can only fill them with *contempt*:

In this schema, the advance of those who are extraordinary is made possible by a vocation to disinhibition that forges ahead solely through active contempt for the restrictive power of morality and convention – hence the thesis of the inevitable criminality of the innovators.²⁰⁴

The one who thinks progress and advance on this register, that is, as philosophy of becoming, and no longer as ontology, is Nietzsche. With '*Thus Spoke Zarathustra* [...] Columbus's deed had arrived in thought'.²⁰⁵ This event, which is the advent of nihilism in Nietzsche's sense, leads to the fading away of all the narratives of origin, that is, of territorial and historical belonging, and to the pre-eminence of risk and novelty: 'A human of his type exists not from their origin, but rather from their advance'.²⁰⁶ Hence will America become the country of immigrants-cum-'pioneers', who hunt, destroy or enslave its indigenous inhabitants.

The disruption now underway, as a new stage of the organization of disinhibition and an extremization of those tendencies characteristic of the Anthropocene, is at the same time being extended, via digital networks functioning at two thirds of the speed of light, to the entire planet. Among its effects is the breakdown of inherited territorial immunities – in the United States and everywhere else – heritages, cultures and social structures originally emerging from their origin, and not their advance: all this can do nothing but prepare the way for an immense counter-reaction, triggering a chain reaction of *incalculable* consequences.

. . .

In addition to *statistics*, which is, for Alain Desrosières, the science of the state in the service of what Foucault called biopower,²⁰⁷ the calculation of *probabilities*, which is something similar (but which, like algorithmic governmentality, is essentially distinct from it²⁰⁸), is what shapes psychopower as the *control, pooling and amortizing of protentions* through the use of probability calculations. This *probabilization of protention* is what leads very early in the Modern Age to a kind of *reflective madness*:

Here the risk society comes about as the alliance of well-insured profit-seekers. It unifies the insane who have thought everything through beforehand.²⁰⁹

These are those *rational madmen* who are always so keen to distinguish themselves from ‘ordinary madness’, the better to maintain their business affairs:

The blooming of the insurance idea in the middle of the first adventure period of globalized seafaring shows that the great risk-takers were willing to pay a price in order to be taken seriously as reasonable subjects. For them, everything depended on establishing a sufficiently deep divide between themselves and ordinary madmen.²¹⁰

This leads to a differentiation between reason and madness, but by a pathway completely different from that traced by Foucault: as the Modern Age becomes the classical age, philosophy, like insurance, begins to legitimate these ‘insane who have thought everything through’, *and vice versa*.

Such insurance systems as Modern Age philosophy drew their justifications from the imperative to separate reason and madness clearly and unambiguously.²¹¹

Insurance replaces worship as a means of consolidating a possible future in the chaos of improbabilities. The improbable is replaced by probabilities as the protentional horizon within which improbability is *dissolved*:

one defines modernization as a progressive replacement of vague symbolic immune structures [...] with exact social and technical security services. [...] Prayer is good, insurance is better: this insight led to the first pragmatically implanted immune technology of modernity.²¹²

According to Sloterdijk, the development of insurance that eliminates the improbable – and that leads towards the ‘death of God’ – would

find its ‘inner basis of certainty’ in Cartesianism’s success in ‘modernizing self-evidence’, and as its reassuring logical ground:

Perhaps the rationalist branch of continental philosophy that followed on from the emigrant Descartes attempted precisely that: providing a new breed of risk-citizens [...] with an unshakeable logical mainland on which to stand.²¹³

This ‘foundation’, however, this ‘basis’, inexorably loses its credit thanks to the effects of what it makes possible, namely, *the new ‘technical world’ that is the Anthropocene*:

On the market of modern immunity techniques, the insurance system, with its concepts and procedures, has completely won out over philosophical techniques of certainty. [...] Insurance defeats evidence: this statement encapsulates the fate of all philosophy in the technical world.²¹⁴

It was piracy that opened these pathways, by practising atheism in an empirical and factual way:

In this context, piracy – [...] the foremost manifestation of a naïve globalization criminality – [...] is the first entrepreneurial form of atheism: where God is dead, [...] the unimaginable is indeed possible.²¹⁵

This leads us, once again, back to the libertarians, who in France, today advocate their ‘new barbarism’,²¹⁶ which is an-archist in the sense that it is fundamentally hostile to all public power and all ἀρχή (*arkhē*): ‘the moderns conceive of the dangers of libertarian and anarchist disinhibition in terms of piratical atheism’.²¹⁷ The question of the relationship between power, inasmuch as it constitutes itself in social structures, which are here primarily called *immunitary* structures, and the spheres that, in Sloterdijk’s philosophy, constitute there-being, falls within what he names macrospherology.

On this point, which leads to the consideration of the relationship, today, between psychic individuation and collective individuation – which are articulations between micro- and macro-spherology – the conclusion of *In the World Interior of Capital*, published two years before 2008, does not manage to reach the heights of what precedes it:

In truth, money has long since proved itself as an operatively successful alternative to God. Money contributes more today to the cohesion of things today than a Creator of Heaven and Earth ever could.²¹⁸

This statement ignores the question of arche-protection and of its 'existential' conditions in Heidegger's sense, of which, of course, Sloterdijk is well aware. It is this overestimation of probabilities – which are the condition of the 'operative success' of 'money' – that leads Sloterdijk to virtually ignore the existential question itself.

In Sloterdijk – as, for that matter, in Simondon – there is no pharmacology: there is none of the sense of the tragic around which Foucault turned in 1961, without the latter ever quite seeing where, precisely, the question of madness in all its forms (in the sense of Foucault *and* Sloterdijk) truly lies. This is why Sloterdijk does not (in 2006) feel the rise of this question: the question of what we refer to as a 'new ordinary madness', within that new form of barbarism that Adorno and Horkheimer already feared in 1944 – which in France, in 2015, becomes that of the new barbarians, and, in the world generally, that of disruption in general, and, in the Middle East, that of Daesh.

The new ordinary madness is what, in issue 413 of the journal *Esprit*, and under the title 'Aux bords de la folie', Marc-Olivier Padiès, Jacques Hochmann and Michaël Foessel describe as a form of *mal-être*.²¹⁹ This 'ill-being' results from what makes existence impossible, whereas Sloterdijk still believes that existential opportunities can emerge from the fact of disinhibition itself, in which he seems ultimately to invest unflinching trust – and there, perhaps, lies his own 'propensity to madness':

From the [moment, in the crystal palace that is global capitalism, that] a radical de-scarcification of goods [occurred,] a leap [took place] in the pampering history of *Homo sapiens* – a leap that opened up an enormously expanded space of existential opportunities.²²⁰

In this cynical tone, Sloterdijk celebrates excess – that is, ὑβρις, which is also to say, crime – which he relates also to chaos, and he does so by referring to Deleuze and Guattari:

The wretchedness of the conventional forms of grand narrative by no means lies in the fact that they were too great, but that they were not great enough. [...] For us, 'great enough' means 'closer to the pole of excess'.²²¹

It is here that Sloterdijk quotes Deleuze and Guattari: 'And what would *thinking* be if it did not constantly confront chaos?'²²² What 'confronts chaos' [*se mesure au chaos*], however, what finds its measure in chaos, is not just excess [*déméure*]. It is, precisely, chaos as the opportunity to bifurcate. Excess, that is, ὑβρις, is its condition. But this condition is not sufficient: it lacks a therapeutic.

7 Governing Towards the Neganthropocene

Before asking what *good* government is, we must ask what *to govern* means. It is particularly important to do so right at this moment, as we enter the age of cybernetic government – our epoch being that of digital networks, which are themselves the fruits of what, around 1950, Norbert Wiener conceived as a science of control.

First and foremost, to govern means to control the rudder [in French, *gouvernail*, but firstly from the Greek, *kubernan*, origin of both *govern* and *cyber*]. Now, what is a rudder, a *gouvernail*? It is an organ that, in turn, is part of another organ, the boat. The boat, which is an ensemble of artificial organs, is what makes it possible to navigate, that is, to sail somewhere, without necessarily reaching the destination, obviously: hence Christopher Columbus, who sailed of course by boat, including the famous Santa Maria, began with a correct intuition – that the earth is round – but reached, not what was then called the Indies, soon to become the East Indies, but instead discovered what they would call the West Indies, encountering for the first time the inhabitants of this new continent, whom they will call Indians.

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A boat consists of a hull, a bridge, a keel, a mast, sails, oars, a rudder and so on: it is a set of organs. But if this is a set of organs, shouldn't we call it an *organism*? An organism, too, is indeed a set of organs. Take for instance a bean: its organs are the roots, the stem, the leaves and so on. But a boat is not an organism, on the one hand because it does not reproduce itself, and on the other hand because it *does not, alone, govern itself*. This is what Aristotle explains in *Physics*.

In order to orient itself, in order, for example, to distinguish Orient and Occident, east and west, a boat needs an organism in the sense given to this term by Lamarck in 1809 in *Philosophie zoologique*,²²³ and, more precisely, it needs that living thing we call a human being, that is, a being itself capable of producing artificial organs, such as flint tools, or rudders, or boats, and capable of making use of or directing those who use them.

Over time, boats become ships, which have a crew, and he who governs the ship is called the captain, which means the governor. The governor governs a set of artificial organs via this organ of command and control that is the *gouvernail*, the rudder. In this way he pilots the boat by commanding the naval officers of the crew who, too, are thus

governed by the captain, and this hierarchical crew itself controls various functions, for example, the sails if it is a sailboat, the engine if it is a steamship, and so on.

It is Plato who refers to the governor of the boat and to its rudder in order to understand good government in the Republic.²²⁴ It is important to note that, for Plato, the city is the macrocosm of a microcosm that is the citizen himself.²²⁵ From this double metaphor, we can learn something quite interesting and important. If we follow it step by step – which turns it into an allegory – we find that:

- on the one hand, the governor has at his disposal an *organ of command and control*;
- on the other hand, this organ is not part of an organism, but rather of something that is itself an organ composed of a set of organs: a boat.

And there are an infinite variety of others.

Living organs, too, can *themselves* aggregate, thereby forming *organisms* that are really aggregates of cells, each of which can have different functions, and where these aggregates can themselves constitute an organ, such as, for example, the liver.

Man has a liver, as do all vertebrates. But unlike other vertebrates, or so it seems, the human liver is susceptible to *dysfunction* in ways that generate not only intestinal disturbances but psychic disturbances, which may themselves be engendered by disturbances wrought by *artificial* organs, the latter being that for which, according to Greek mythology, Prometheus is responsible, through his theft of fire, as told in Hesiod's *Theogony*.

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To govern is therefore to *navigate* by steering a *course* – with a rudder – after having *established* this course – with the appropriate instruments. If we *must* govern, not only on the sea, but also in time, it is because the world is constantly changing – and it is man himself who effects this change, and does so from the beginning of his trajectory, through which what we call nature becomes history – or prehistory. But this is an issue that really becomes explicit in philosophy only with Hegel, even if the latter did not really give consideration to prehistory – the idea of which did not yet exist in his day. That the world is constantly changing is generated by the logic of what Bertrand Gille called the technical system,²²⁶ which is itself what results from a transformation of animal organogenesis into *exosomatic organogenesis*, that is, artificial and technical organogenesis.

To govern in the twenty-first century is to govern *in the context of an immeasurable acceleration of the evolutionary process characteristic of human societies*, that is, of exosomatization. This is the question raised by Nicholas Georgescu-Roegen²²⁷ – exosomatization being itself what Alfred Lotka showed to be an immeasurable acceleration of the organogenesis that is life, but one that occurs by means other than life.²²⁸ The *contemporary* acceleration of exosomatization is itself incommensurable with previous forms of exosomatization, and it takes to its furthest extreme a turning point in exosomatization that began 250 years ago, which has been called the Anthropocene: commencing in Europe, before migrating to America, and eventually becoming a globalized process.

This recent, extreme direction taken in the Anthropocene is what has been referred to as ‘disruption’,²²⁹ that stage of the Anthropocene that began in 1993, the lived experience of which is like a storm carrying populations along with it, as if borne along in rudderless vessels.

Cybernetics, which was conceived as the science of government, is thus now the concretization of what is commonly understood as a ‘new industrial revolution’. As such, it is radically transforming the *instrumental conditions* of decision-making, just as it is radically transforming *the future of work* – in the context of a massive decline in employment due to the effects of automation, which will have immense macro-economic consequences on a planetary scale.

What I’d like to do now is try to convince you that, in this angst-ridden context, which calls for *a surge or a boost of reason* and therefore of *responsibility* in order to confront the unleashing of irresponsibility, the public authorities and private powers that intend to maintain the course of rationality must completely recompose their fundamental relations *at the regional scale*, and they must do so in the service of new *local pacts* capable of constituting a *contributory society* and through which a new era can be established: the Neganthropocene. These concepts (contributory economy and Neganthropocene) themselves govern an experiment currently underway in the northern suburbs of Paris, in Plaine Commune, a description of which can be found in French and English at recherchecontributive.org.

If it is not always the case that exosomatization has transformed the biosphere, it did at least fundamentally *begin* to do so from the dawn of the noetic era, the motives for which are described here by Georges Canguilhem:

Man, even physical man, is not limited to his organism. Having extended his organs by means of tools, man sees in his body only the means to all possible means of action.

Thus, in order to discern what is normal or pathological for the body itself, one must look beyond the body. With a disability like astigmatism or myopia, one would be normal in an agricultural or a pastoral society but abnormal for sailing or flying. From the moment mankind technically enlarged its means of locomotion, to feel abnormal is to realize that certain activities, which have become a need and an ideal, are inaccessible.²³⁰

This fundamental transformation of the biosphere has been possible because exosomatization introduces a new, dynamic process of technical individuation, which Leroi-Gourhan describes in *Gesture and Speech*,²³¹ a process that amounts to exosomatization itself, and eventually leads to what Heidegger called *Gestell*, where the latter is concretely expressed through an extra-terrestrial exosomatization that may extend very far indeed (such as to other planets), but also and especially to the limits of the biosphere.

It has, therefore, always been necessary to govern, to steer a way along paths of governance that have been highly diverse – shamanic, basilic, imperial, theocratic, republican in the sense described by Kant in ‘What is Enlightenment?’,²³² or democratic, but in a sense from which we have veered off course. And, if we *must* govern, if we must steer a course with a rudder that must not be allowed just to serve the market, which is always self-destructive, but must instead serve a government, it is because the market is *inherently* short-termist, leading at regular intervals to catastrophes that are increasingly irreversible.

If we must govern, then *today* it is a matter of changing course, beyond the dead end into which the world has been locked by the conservative revolution. But what we must reckon with and govern with, today, is the combining of robots with artificial intelligence.

Faced with this, what *politics of automation*, and of the *delegation of cognitive functions* to machines, should we adopt, and what *limits* should we assign to this new reason, to use the terms of the question that Kant raised for his own age,²³³ the question of what we will ourselves call the *reason of automatisms*, and which implies both a new critique of political economy²³⁴ and a new critique of reason in the broad sense, which I have tried to delineate in *Technics and Time*, 3?²³⁵

Answering this question involves passing through Whitehead, and notably *The Function of Reason*,²³⁶ through Lotka and Georgescu-Roegen, and through Amartya Sen,²³⁷ as well as through new readings of two of Marx’s texts, *The German Ideology* and the *Grundrisse*. We must reread these texts:

- on the one hand, in order to understand how and why the capitalism that today dominates the planet amounts to an *epistēmē*, which is in fact the question of what Marx called the ‘general intellect’;
- on the other hand, in order to *critique* this *epistēmē* that is reaching its limits, if not the limits of capitalism itself.

Only on this basis will it be possible to elaborate new policies for science, culture, education, industry and the economy, and to do so *on new constitutional bases*, themselves reimagined starting from a neganthropic re-evaluation of the history of humanity and of its future, that is, of the history and future of noesis, which also requires a new conception of the republic and of democracy *in the context of what I call planetary exorganisms – and it is this question that I will now take up.*

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Government, in the modern sense of the term, arises in urban milieus after the Neolithic era. It does so inasmuch as the dynamism of the town or the city is what supplies the functions by which decisions can be made, including the noetic functions broadly speaking, and therefore the deliberative functions that they nourish, which amount to the various forms of government, in the way we think of it in particular after Machiavelli, who points to the shock of the Renaissance, then Hobbes, who opens the modern debate on the state and government.

As for us, urbanites of the twenty-first century, we are entering the era of automatic cities – and beyond that of automatic economies, based on the data economy. What place remains in this situation for ‘government’? And if there is such a place, what then would constitute *good* government?

We call these automated urban regions ‘*smart cities*’. But what would make a city *truly* intelligent? What would be its relationship to automatisms? And, between an intelligent city and an automatic city, is it necessarily a question of *choosing*?

Let us ask, firstly, what a really intelligent city would be, and even, more generally, what a city has to do with intelligence, and furthermore what intelligence *is* – this question is indeed necessary, given that we belong to a time when the mean IQ is known to be decreasing,²³⁸ as indeed is life expectancy,²³⁹ and given that it is an epoch in which, more generally, functional stupidity seems to have become inherent to organizations,²⁴⁰ of which cities are of course cases.

With respect to this epoch that is ours, the ‘smart city’ implies a new functional intelligence that would constitute a new urbanity: digital urbanity. These questions cannot be approached independently of those that arise more generally with the data economy, and with the ‘robolution’ that is on the way to reshaping and upsetting the entire macro-economic landscape, fundamentally threatening the sustainability of the economy stemming from what we call globalization, the latter now so widely challenged.²⁴¹

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Addressing these questions means thinking the city starting from the concept of exosomatization as the pursuit of organogenesis, such that, from the advent of hominization, it becomes ‘organic projection’, as Ernst Kapp said without understanding its significance.²⁴²

The first exteriorizations of mental contents appear in the Upper Palaeolithic, followed in the Neolithic by the first sedentary settlements, then by the great empires and the first urbanizations, involving, in particular, the development of archive, memory and representation functions. The consequences for the present day must be drawn:

- on the one hand, by conceiving the process of urbanization above all from the perspective of urban morphogenesis and as an exosomatization constituting all kinds of exosomatic exorganisms, such as, for example, malls, or specific and functional architectures such as the Parisian wholesale market, Les Halles, which Émile Zola described in *Le ventre de Paris* (1873),²⁴³ exosomatic exorganisms, functional concentrations of organisms that are themselves exosomatic, that is, us, we ourselves, these aggregated exosomatic exorganisms also amounting to exorganic territories, in a sense that I am about to explain;
- on the other hand, these urban concentrations are always regulated by a process of grammatization that begins in the Upper Palaeolithic, continuing with the various forms of writing, which themselves develop with various forms of towns and cities, and which opens, in India, with its diverse forms of writing, the era of grammars in specific urban forms, and ultimately the writing of the entire world that will eventually lead, in the nineteenth and twentieth centuries, to digital writing, which has its own apparatus.

When writing is ideographic, it governs the relations between the scribes or clerics or officials of an empire, who in China are the

governors of the Empire serving the Emperor, who may dream of his ideal organization, that is, of good government, these imperial functionaries, then, organizing the relations with the urban and rural populations that the Emperor commands imperatively, that is, imperially.

When writing becomes alphabetical, it constitutes a city that opens up a citizenship, where there are isonomic relations between citizens and through which the city becomes, develops, decides about itself. The city is an exorganism that at first evolves slowly and sporadically, but this evolution then accelerates: hence, for example, the same Parisian mall that in the 1970s replaced the wholesale market that Zola had described at the end of the nineteenth century, itself became obsolete so rapidly that in the last decade it was replaced yet again. All this falls within the scope of ‘creative destruction’ as theorized by Schumpeter.²⁴⁴

Printing, which in Europe extends the practices of reading and writing in the religious field, also paves the way for the advent of capitalism, which will intensify every kind of exchange and extend grammatization to gestures, initiating industrial automation, the latter nevertheless creating ‘employment’. From there, grammatization is then extended to perception and eventually to the understanding.

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Today, grammatization has become digital, and this has resulted in *generalized* automation. The macro-economic impact of the latter has been and will be immense, simultaneously involving the smart city, the robolution and the data economy. On the basis of these very general analytical elements, I have for some time been running a programme in Plaine Commune with the goal of transforming this region in ten years, creating there both a living laboratory and what we are calling a contributory learning territory – referring to Pierre Veltz’s *Des territoires pour apprendre et innover*.²⁴⁵

A town or a city is the social concretion of a society individuating itself exorganically, which grows exorganically, and at a pace and a rhythm that, since the nineteenth century, has accelerated unimaguably – thanks to disruption.

Before our present disruptive age, territorial exosomatic growth, whether in the form of a city, a metropolis or a village, territorialized an *authority*. Such *authorized* exosomatic growth localized a spirit, a soul – a sense of place, an *esprit des lieux* as we say in French, animated by a soul itself founded on a diversely symbolized history, more or less monumentalized, and more or less ancient.

Functional arrangements were, then, territorially constituted, setting up more or less diversified modalities of what Simondon called

processes of psychic and collective individuation, processes that are more or less temporary or permanent. I myself have argued that these processes of psychic and collective individuation are based on a process of technical individuation – which is the process of exosomatization referred to by Lotka and Georgescu-Roegen.

People who have worked together for twenty years in a corporation or a company belong to a process of psychic, collective and technical individuation that is the corporation itself, which is more or less territorialized, and which constitutes a kind of exorganism comparable to a ship animated and piloted by a crew – ships being themselves instruments capable of waging war.

The city, as an exorganic landscape forming a local authority, itself supports those exorganic processes of individuation that are businesses and corporations. The latter are, as it were, outgrowths of the territory, formed *between the technical system*, which is ‘embodied’, so to speak, by those businesses and corporations, which are the concretion and stabilization of technical individuation processes, *and the social systems* – systems of education, language, taxation and so on, and obviously the law and especially the law and right of citizenship – which are specific forms of psychic and collective individuation.

How is all of this and how *will* all of this be transformed by the digital exosomatization that is leading to the automatic city – the smart city – where data is no longer produced through statistical apparatus but instead with social networks dedicated to capturing data, operating via sociograms fixed no longer on the territorial exorganism but on global, planetary exorganisms, and using satellites that are an advanced and geostationary stage of exosomatization, more or less specialized, functioning as relays for networks of all kinds?

All this transforms local territorial dynamics and affects the management apparatus used by territories to predict their population of inhabitants, producers, consumers, their flow, and so on. It is faced with all these questions that we must conceive a *truly* intelligent city, one that is *more* intelligent, and we must do so in the epoch of the growth of stupidity, which means that we must reverse a dynamic that has become negative.

This more intelligent, truly intelligent, ‘really smart’ city must seize hold of automated processes, above all in order to prescribe boundaries, performance characteristics, functional characteristics, in order, in other words, to undertake territorial *design*. This is possible only on the condition of arranging the various processes of psychic and collective individuation among themselves via technical individuation. That is: by conceiving a *territorial reticulation* capable of reconstructing a *territorial dynamic* that produces a *sense of place*

[*esprit des lieux*] and a *positive local animation*, in a context where it is also and perhaps especially a matter of rethinking the relations between work and society at a moment when employment is in irreversible decline.

All this raises the *question of forming a cohesive social body* [*faire corps*] in the sense referred to by Spinoza. A city, or a network of towns and cities forming a political unity, is the way in which a society, by forming a ‘body’, participates in the concretization of an urban exorganism.

Under what conditions can a social body form when urban exorganic time and space is riven with perpetual conflict – for example, conflicts between a commercial zone and the animation of a city centre? How do we conceive processes of individuation in an exorganism that is constantly transforming – which is vastly different from what occurs with endosomatic organisms, that is, organic rather than organological organisms? Organic organisms do not modify their structure at the level of the individual, and their evolution occurs on a timescale that is inaccessible and imperceptible to them.

For us, on the other hand, we who are not only organic and endosomatic but organological and exosomatic, we are constantly in the process of transformation, both in terms of the exorganisms that we form and in terms of those within which we live. The latter are perpetually changing, or they may suddenly sprout up like mushrooms, such as Sarcelles (the neighbourhood where I grew up between the ages of 7 and 15). This is especially so since the twentieth century, and this acceleration also corresponds to that of creative destruction, which is based on continuous economic development, that is, more or less, on organized and organizing obsolescence – a situation that has led to the installation of the Anthropocene that has now become the disruption.

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It is starting from these very general considerations, and in this highly specific context, that the Plaine Commune project aims to constitute a learning territory capable of thinking and territorializing these questions in order to become a territory of reference, that is, a *prescriber*, where all the actors this involves will want to learn along *with* the territory, at the same time that they teach it.

At the origin of Plaine Commune lies the formation, in the early 1990s, of a cooperative involving nine municipalities, set up at the instigation of Patrick Braouezec, which led to the constitution of a new exorganic body and a new territorial authority. As this shows, exorganic bodies can occur over the top of other exorganic bodies, or gather exorganic bodies together – those of the psychic individuals

that we are – which individuate themselves collectively on the basis of a technical system that allows them to do so.

At the origin of Plaine Commune, there is a conurbation, the territory of Seine Saint Denis, north of Paris, from within which a sub-conurbation has emerged that is the cooperative, now inscribed within the exorganism that is called *Grand Paris* [Greater Paris]. And if I insist on the fact that this establishment was originally conceived as a cooperative of municipalities, it is because what we want to create with Plaine Commune is a cooperative of knowledges – based on a training and knowledge transmission network.

There are, as we said, all kinds of exorganisms: boats, businesses, companies and factories, the latter conceptualized for the first time by Andrew Ure, political organizations and regional administrations at differing levels and represented by symbols or institutional buildings or monuments. Today, the relations between all these exorganisms are ever more subject to deterritorialized exorganisms, also called platforms, founded on the technology of cloud computing, global, purely reticular technology that makes possible new forms of control.

It is undoubtedly a question of grafting *onto* this apparatus – as Plaine Commune has been grafted onto the department, the territory, the local dynamics of psychic and collective individuation and technical individuation. But it may indeed be equally necessary to reimagine all of this, and to do so technologically, economically and politically, which is what is at stake in the NextLeap programme, one partner of which is the Institut de recherche et d'innovation (IRI).

These are the questions that must be asked of a truly smart city – about its boundaries, its insertion into the positive and negative dynamics of *Gestell*, and by very *deliberately* prescribing its arrangements with other distant and deterritorialized social networks, while nevertheless maintaining its territorial integrity. It must also contribute to the establishment of other exorganisms, for example in terms of business investment within the territory, which has effects on this territory, transforming it, producing other effects in return, since this territory nourishes it – at least in part.

How can these effects be positively potentializing, keeping in mind that they can also be very negative, especially in the era of full and generalized automation?

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To confront such questions requires the creation of a territorial awareness, a territorial consciousness to underpin the formation of a territorial social body, a consciousness that is far from being simply that of

the citizen – even if a key question remains the place of citizenship in this consciousness.

A consciousness rises: conscience *takes hold*, we *realise*, we *wake up*, we *become aware*. How? In this taking hold, for this becoming aware, there are *instruments for creating and shaping consciousness*, and law-governed practices of such instruments – practices that may sometimes be not just lawful but exclusive forms of control, for example those of the police, who have lawful and exclusive functions and instruments, weapons, intelligence and so on (here we should refer to Walter Benjamin²⁴⁶ and to his critique of violence, *Gewalt*, as well as to Heidegger).

Fostering consciousness, and the instruments for doing so, generally implemented by institutions, are the very conditions of citizenship, which is always the expression of *pacific relations*: citizenship is what makes it possible to *make peace*, firstly civil peace, then between nations, and *today the possibility of a peace between economic actors* that could again make civilization possible in a new way, given that the disruption is increasingly experienced as a war, a war leading, like all wars, to barbarism.

Europe has replaced military war with economic war – and for the European nations this experience is very unpleasant: they feel themselves to be, if not ruined, at least on the verge of ruin. But this is so because there is no longer any territorial intelligence in Europe – at any territorial scale: there is no understanding of *what plays out in the new dynamic of exosomatization that is the disruption*.

We need to elaborate, in France, in Europe and in Asia, *together*, a *new geopolitics of exosomatization*, making it possible to realize a territorial and extra-territorial politics of exosomatization, and we must do so through political *cooperatives* of exosomatization.

The inhabitants of urban regions must become co-operators of a deliberate and deliberative exosomatization, that is, reflexive and no doubt disruptive, but *appropriated and prescribed by territorial actors*, and where businesses come into this territory in order to work with these educated, instructed and equipped co-operators, in order to provide them with means, but also to learn from them new forms of intelligence, which requires a territorial pact of cooperation between these co-operators.

For this, we must reread and reinterpret the works of Amartya Sen by reflecting on them alongside those of Marx and Georgescu-Roegen.

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Let's summarize: towns and cities, aggregated in countries, are exorganic processes within which forms of life are produced, processes of

psychic, collective and technical individuation more or less instituting the spirit of a place, and so on – yet today the whole world knows that cities are increasingly haunted by an urban ill-being, and that the experience of city life is increasingly inurbane. How is it possible to design ‘truly smart cities’ through which an era of *digital urbanity* could be invented, and the inurbanity of the automatic city reversed?

This malaise is directly tied to what I have described as systemic stupidity, or functional stupidity, itself connected to the decline of life expectancy, and to all those ‘blues’ resulting from so-called ‘downgrading’ [*déclassement*]: of an economy, a society and so on. How can this malaise and ill-being be anything other than immeasurably increased by the disruptive process that gives rise to the automatic city, itself inscribed in automatic society?

To pose this question correctly, we must begin by again stating what we mean by disruption.

Disruption operates through short-circuits: it proletarianizes individuals and replaces them with automatisms, which, through this very fact, bypass and short-circuit them. These short-circuits begin with the proletarianization that Adam Smith deciphered in *The Wealth of Nations*, where the hyper-division of labour, leading to automation that will eventually become Taylorist, gives rise to a process that deprives the producer (that is, the worker) of his *savoir faire*, his work-knowledge, eventually doing the same thing to the supervisor, then the technician, and so on, right up to Alan Greenspan, who explained this himself at a hearing of the American senate.²⁴⁷

After the advent of the culture industries, which made it possible to control ways of life, but which could do so only at the cost of a total proletarianization of the consumer, today’s ‘data economy’ amounts to a new stage of this proletarianization, one that outstrips and overtakes our will and our volitions via platforms, which Benjamin Bratton describes in *The Stack*.²⁴⁸

A truly smart disruptive city, one that is truly urban, habitable, desirable and attractive, is possible only if we reinvent automatic society, and reinvent it in every town and every city, so that every city becomes a laboratory for the production of a *truly social* automatic society – rather than allowing it to produce a *dissociety*, an automatic dissociation and disintegration that could only pave the way for a social explosion.

This is possible only on the condition that this ‘truly smart city’ is also and above all a place where we can think, at every level, the arrangement between automatons and processes of dis-automatization: in education, in the public sector and public administration, in business, and so on – *just as* in art schools, football stadiums, etcetera.

This requires a social and civic life that provides communications infrastructure and networks specifically designed to valorize automatism in the automatic city and to do so by providing capabilities for dis-automatizing, that is, for deliberating. Hence it is that in a small French town, Loos-en-Gohelle, sensors have been installed that, rather than automatically triggering algorithmic processes, instead convene town meetings, inviting residents to deliberate.

Our ambition at Plaine Commune is to become a model in the field of ‘truly smart cities’, by reticulating this territory on the basis of completely new data architectures that are profoundly socialized at every exorganic scale of this exorganism, which is what a territory of this type amounts to. We believe that, to achieve this, the web must be completely redesigned along lines that we have experimented with in the academic context, and that we plan to experiment with in the administrative context, as well as providing outreach services for the telecommunications operator Orange, but also for Dassault Systems, from the perspective of intelligence and engineering interests. This process of reticulating this whole territory and all of its exorganic organizations aims to enable *deliberative* processes to be set up at *all* levels, and to be articulated with one another – because they will share the same deliberation protocols. Our intention is to use these deliberative processes to generate local forms of knowledge capable of engendering negentropy – to place automatism at the service of dis-automatization.

We refer to a negentropic, contributory economy, based on a contributory income. The aim is to give rise to a new urban consciousness composed of territorial and extra-territorial forms of knowledge. Cities have from the beginning been places of knowledge. The production of knowledge is concentrated there. Of course, life-knowledge and work-knowledge existed prior to this, which were then augmented by new, urban knowledge that gradually replaced feudal, rural and tribal knowledge. In cities, new forms of knowledge are invented, enabling the development of urbanity, that is, of manners, elegance, refinement, all that which was, for centuries, in Europe, the dream of the bourgeoisie, and which has today been totally annihilated – because today there is no longer any bourgeois culture.

Organic life is that which defers that entropy described by Clausius on the basis of the works of Sadi Carnot, and in relation to which Schrödinger showed that every form of life is the *local* formation of a *counter-tendency*, which he called negative entropy.²⁴⁹ Exosomatization is the continuation of this process, but in a new sense, producing an *increase of entropy and of what results from it, disorder*, but also a *new form of negentropy*, which I call ‘neganthropy’, that

is, the production of those *new forms of locality* that are, precisely, *exorganisms*.

Tomorrow's challenge is to increase neganthropy, and to develop an economy that valorizes it *systemically*. This is the goal of Plaine Commune, which has for this purpose instituted a Chair in Contributory Research, to carry out this experimental research by testing a contributory income.

I would have liked to have explained why and how all this is also a response to some opposing arguments that can be found in *Tristes Tropiques*, by Claude Lévi-Strauss, where he talks about what he called entropology,²⁵⁰ and why I respond to this with a general organology that thinks exosomatization in terms of 'neganthropology', but, unfortunately, I'm out of time.

8 Five Theses after Schmitt and Bratton

Preliminary remarks

The goal of the NextLeap project is to accomplish a leap in the development of network digital technologies, where this would involve:

- 1 a new use of cryptographic technology;
- 2 technologies of decentralization, that is, of the *distributed relocation* of storage capacities, computing power and software tools, all of these, today, being caught in the grip of ‘cloud computing’ and ‘software as a service’.

To put this in Benjamin Bratton’s terms, this is a question of envisaging an alternative to ‘the Stack’, and of proposing a new architecture.²⁵¹ We will see from Bratton’s analysis that such an ambition can only be conceived as a *new geopolitics of computing technology* at a global level: as *planetary-scale computation*. But we will also see that the latter must be understood in terms of its relation to Vladimir Vernadsky’s concept of the ‘biosphere’.²⁵²

With respect to what Bratton calls ‘alter-totalities’, which would emerge from an *alternative design* of platforms, NextLeap hypothesizes that such a re-design should begin with the limiting of what Bratton describes as ‘compulsory transparency’, and with a reorganization of the Cloud, which, according to Bratton, is one of the six layers of the Stack: Earth, Cloud, City, Address, Interface, User. If we had more time I would add, to these six layers, six corresponding theses that extend but also modulate and even contradict Bratton’s account. The time for this is, unfortunately, lacking, but it is something I will do on another occasion – in the framework of the Chair of Contributory Research we have created in Plaine Commune.

If I persist in referring to Bratton’s analysis of the Stack, it is partly because it feeds into my own analysis of platforms insofar as they are *planetary-scale computational functions* of what, in 1926, Vernadsky called the biosphere, installing the reign of what, in 1949, Martin Heidegger would call *Gestell*,²⁵³ but which must, in turn, be taken further via the analysis of what, in 1945, Alfred Lotka had already described as a process of exosomatization.²⁵⁴

The advent of platforms, which form planetary-scale exorganisms, occurs according to a rhythm which is that of ‘disruption’, which is to

say through the unfurling of a digital technical system that outstrips and overtakes social systems. This has established a situation, a *state of fact*, that awaits its state of law, whose prerequisites I attempted to formulate in *Automatic Society*.²⁵⁵

By raising questions about the *secrecy* that cryptographic technologies must protect, and about the decentralization of data storage infrastructure presupposed by *distributed localization*, NextLeap argues that, in terms of law:

- 1 We cannot impose *total transparency* without then falling into the *totalitarianism of computational totalization*, which dissolves the individual into the calculable and computable whole, where everything finds itself *reduced* to pure calculation – carried out at two thirds of the speed of light – which would be to bring back what Alexander Zinoviev described as the very basis of Stalinism.
- 2 At the same time, we cannot eliminate – and this is the *same* question – *locality* and *localization*, which, as what develop, if not in secret, at least in a space that is protected and local in this sense, are the basis of what I will describe here as *neganthropological noodiversity*.

. . .

These issues lie at the heart of the project that IRI and Ars Industrialis are leading in Plaine Commune, in that:

- 1 Cryptology, which is the science of *preserving secrets*, is central to a reconsideration of the *fundamental principles of law*, and of a *new arrangement between reticular digital technology and law*: the *right to secrecy* and the *duty to protect it* are the *basic and essential conditions of any deliberation*, whether this involves the dialogical discussions of Angela Merkel or those of a researcher interpreting a corpus. I will return to this example, which raises the question of an *age of secrecy* insofar as the secret is not *pro-phanes* (outside the temple), that is, public, which means published via some or other technology of publication, in this instance alphabetical writing, as was shown by Jean-Pierre Vernant,²⁵⁶ and such that the law is what leads to the delimitation of a new sphere of secrecy, which is also that of intimacy, and which is embodied by Hestia in her transductive relation to the public sphere, whose god is Hermes. Hestia

and Hermes are the polar figures – the bipolarity – who, by distinguishing them, bind together psychic individuation and collective individuation. As they do so, they constitute a new *philia*, a new *binding force* for the human group, which, along with alphabetical writing (the god of which is Hermes) that enables the law to be *published* and thus to be *transparent* to the citizenry, installs the *polis*. What the Greek city-state thereby upholds is that the citizen is the individual who bears the legitimate right to *interpret and transform the law* – provided that he respects it and respects the procedures of its interpretation, as well as those of its transformation in the *bouleutērion*, where the latter is the space of *deliberation* that is itself the condition of law insofar as law is not automatic, but reflexive. If we had more time, we would at this point bring in Henri Bergson's analysis of the law as bound to evolve, that is, to individuate.

- 2 The decentralization of infrastructures, and therefore of architectures, must be thought in close articulation with *localization*, which is the condition of formation of those bifurcations that we are calling neganthropic, in a world that has become fundamentally anthropic, and which thus threatens to self-destruct, through which what we call the Anthropocene becomes the Entropocene. It is notable that Bratton refers in this regard to Carl Schmitt, and in particular to his argument that there is no law without *nomos*, *nomos* being founded on taking possession of land, that is, on conquest.²⁵⁷ One might obviously suggest that, with this discourse that relates law to earth and to the seizing of land, Schmitt thereby tends to legitimize the belligerent enterprises of Nazism, not to mention primordial and extreme nationalism. And such a suggestion would clearly be valid, even though *The Nomos of the Earth* was not written until after the fall of Nazism. As for myself, I posit that Schmitt, by assigning *nomos* to the locality of a plot of land and its borders, unwittingly raises the inherent problem of *locality* involved in any negentropic bifurcation, in life – in Erwin Schrödinger's sense – and in any neganthropic bifurcation, where the latter must be thought on the basis of Lotka's analysis.

If, rather than *rejecting* the Stack of platforms, we propose to rethink it profoundly, this implies that we must *struggle against the entropic*

tendencies that are unleashed by a calculation that eliminates all singularities and all secrecy, through a dictatorship of transparency itself founded on exosomatic deterritorialization, in turn founded on exosomatic functions that have become planetary. It is indeed, then, a question of reconstituting processes of localization, which are always more or less temporary, processes of spatialization operating via localities and enabling a temporalization that is itself localized: all this ultimately falls within the realm of what Jacques Derrida called *différance*.

■ ■ ■

My intention with these long preliminary remarks is firstly to say that, if it is indeed a question of *making a leap* with the Stack, this leap must lead to a *thorough reconsideration of the architectonics of digital networks*, where the latter must themselves be situated within the *history of exosomatization* and *as exosomatization*. Exosomatization begins as a new stage in organogenesis through which the living complicates itself by originally combining itself with the non-living. This is the passage from *organic* life to *organological* life, life based on the fabrication of its organs. I say ‘based on’, in that:

- on the one hand, an exosomatic being cannot survive without its artificial organs;
- on the other hand, the major part of its survival in the present-day world rests on its *ability to participate in the pursuit of exosomatization*, that is, on ‘production’ in the sense that Marx and Engels gave to this word in their fight against German idealism, through which they became the first thinkers of exosomatization.

Nicholas Georgescu-Roegen argued on the basis of exosomatization that economics, as the sphere that regulates the relations between organs and organisms, replaces biology.²⁵⁸ If biological laws ensure the unity and perseverance of organic living beings, it is economic laws (and we must understand ‘economy’ here in a broad sense that includes Georges Bataille’s account of general economy and Freud’s account of libidinal economy) that ensure the unity and perseverance of exorganic beings, whether these are simple or complex. A complex exorganic being would be, for example, the unit of industrial production as described by Andrew Ure,²⁵⁹ whose analysis Karl Marx takes up in order to describe the factory as a ‘vast automaton’,²⁶⁰ or, again, those platforms that, in our own time, as Bratton describes, amount to planetary exorganisms, which, moreover, tend to impose monopolies

in the sense of so-called natural monopolies, as these appeared with nineteenth-century networks on a national scale, but which become, with platforms, functional monopolies on the scale of the biosphere, based on the orbital and therefore extra-terrestrial infrastructure of geostationary satellites.

We are told by Bergson that law is necessary in order to bind together social atoms, which are what I am here calling simple exorganic beings (and that Gilbert Simondon called *psychic individuals*) within complex exorganisms (which are the fruits of what Simondon called *collective individuation*), tied by obligations that are no longer of the order of instinct but of the order of morality, religion and justice – an order from within which elements of disorder constantly re-emerge, which may form the origin of a new order, as emphasized by Rudolf Arnheim.²⁶¹ This *dynamic*, which for Arnheim is that of art and indeed of all human affairs, amounts to the local production of negative entropy by organisms that localize their boundaries: for a cell, the membrane, for an organ, connective tissue, for a multicellular body, skin. They do so on the foundation of ever-increasing entropy, to which the organism always ultimately returns, when it becomes a corpse that once again turns to dust.

In the case not just of organisms but exorganisms, this boundary becomes a *border*, or a *gateway*, defined by convention, which we also call *law*, and *which is applied locally as that which binds together the exorganic atoms that are those whom we still refer to as citizens* – but who, after the advent of platforms, become what Bratton calls Users.

I insist on this question of locality in order to advance five theses:

1. The *question of law* is the question of the *regulation of relations between exosomatic organisms*, which I also call *exorganisms*, and which can be either *simple* or *complex*: psychic individuals in Simondon's sense, citizens in the Greek sense and Users in Bratton's sense all constitute simple exorganisms, while collective individuals, such as a professional body, a unit of production in Ure's sense, a city, a nation or a platform, are all examples of complex exorganisms. Law is what governs the relations between simple exorganisms and complex exorganisms, and, secondarily, the relations between two or more complex exorganisms. In the epoch of the planetary exorganisms that platforms tend to form, however, this question is raised in completely new terms, as Bratton highlights.

2. Unlike Bratton, I argue that this question must be approached from a perspective that is not only negentropic, but neganthropological, and which requires a neganthropology. If Schrödinger could define negative entropy, or negentropy, as the *local slowing down of*

the increase of entropy through the organization of life, that is, by its organogenesis materializing its organization, the *exosomatic* pursuit of this organogenesis induces a new regime of entropic deferral and of the localization of anti-entropy (a term I am taking up from Norbert Wiener) that I therefore call neganthropic.

In neganthropic becoming, which constitutes a neganthropology, exosomatic organs are *pharmaka*, which is to say, poisons and remedies, *which can increase both anthropy and neganthropy*. Hence law is what aims to *maintain the unity of exorganisms perpetually threatened by anthropy, and to do so by protecting and intensifying the neganthropic potentials of both simple exorganisms and complex exorganisms*, that is, their *capacity for neganthropic bifurcations*, and, with that, the *capacity for the law itself to evolve*, the constant possibility of putting it into question, and, through this alone, of *respecting* it.

From this perspective, the law is always what preserves *both* the possibility of *secrecy*, such as, for example, the secrecy of our beliefs, which are never illegal, *and* the legal conditions of *publication*, such as, for example, the possibility that our beliefs may become illegal if they are made public – as is the case in France for anti-Semitic discourse or racist discourse in general. In referring to this last example, it is not a matter of defending this particular French law, but of noting that, if opinion is free, its actualization, whether in the form of speech or otherwise, is not.

In a totalitarian regime, whether or not it is a state formation, transparency is required and the secret is systemically eliminated. This is the whole question involved in the complex positions espoused by Alexander Zinoviev, including in his critique of Glasnost.

Now, we propose that such a question must be intimately tied to the question of what we call a *neganthropic contributory economy*, an economy that struggles against the anthropy that platforms increasingly produce through the network effect and its self-referential consequences, such as the fact that the heterogeneity of exorganic atoms tends to be homogenized, even as, all the while, the Entropocene accelerates. Following Marx's critique of law, we posit that law can be just only if it is codified economically, so to speak, which is to say, as the formalization of social relations producing value that goes beyond the conception of value derived from the coupling of use value and exchange value.

3. The *juridical question* and the *economic question* are not separable, because, while *the law is what produces values beyond all calculation, the economy calculates values on the basis of a standard that itself has no price*, since it constitutes the canon of any evaluation.

Here we rediscover the question raised by Plato in *Timaeus*, where he argued that, were everything made of gold, the only thing that would be invisible would be gold.²⁶² The value of all values can, for structural reasons, have no price, since it is that in relation to which price is *given*, and hence it is in a strict sense *inappreciable*, and therefore *infinite*, that is, *incalculable*.

The resulting link between economy and law, which in Trinitarian theology is also called *oikonomia*, is the link between what is calculable and what is not, each incapable of doing without the other – the one and the other constituting the *two conditions* of any value. Crime consists precisely in transgressing a supreme value of the law, such as, for example, the production of human life, in the name of a calculable interest, which is in the final reckoning always particular, the whole being itself incalculable because it is a *holistic process* such that this *holon* is superior to the sum of its parts, a *superiority* that was once called, and that we sometimes still call, God.

These two distinct yet inseparable questions have in common the imperative question of the protection and development of *neganthropic capabilities*, without which it is impossible to create wealth – this *creation of wealth* being that which is produced by work.

Without such protections, both in law and by the macro-economic rules that this law ought to sanction, generalized proletarianization and the liquidation of knowledge, the latter replaced by the reticulated computational systems of intensive computing, are bound to increase consumerism's entropic toxicity, which threatens to produce a decline both in life expectancy and in IQ.

4. To carry out such aims, we must *profoundly rethink the architectures of digital networks*, both at the level of *data formats* and at the level of the conditions for the building of *social networks*. To put this more precisely, if the question of secrecy obviously begins with cryptography, it cannot end there: it must also be based on the constitution of *incalculable fields*, which is to say, fields *irreducible to averages*. The reduction of value to averages is what generates an *anthropy* that destroys all values, as Frédéric Kaplan has suggested in his account of linguistic capitalism and its tendency to lead to a decline in linguistic value.²⁶³ This also equates to the struggle against the destruction of exceptions – that is, of singularities – by levelling, which lies at the base of Nietzsche's entire thought. These are also the stakes of everything described by Quételet, subject to a radical critique by Gilles Châtelet,²⁶⁴ and it also constitutes the specificity of Kakania, according to Robert Musil.²⁶⁵

Technologies that calculate averages through the use of Markov chains, and the algorithms of intensive computing based on the theory of computable functions, do in fact give rise to an anthropic tendency that threatens those retentional fields that are societies, where societies are understood to be regimes of mutual obligations, that is, systems of rules. And this includes, for example, the rules of language, which, as Frédéric Kaplan has shown, are performatively altered and algorithmically reduced to a set of averages, on the basis of services rendered. What this leads to, however, is the regularization of language, which is to say, in the final analysis, to its profound alteration: such is the contradiction not only of linguistic capitalism, but of what might be called the capitalism of the average man, who emerges from smartification, and who also becomes the average baby.

Once we realize that what makes language evolve are *exceptions*, and that they do so as *exemplary deviations* from the mean, an exemplarity whose absolute necessity is underlined by Bergson, we cannot but be disturbed by the *computational reductionism that literally disintegrates neganthropic social systems*, which thereby become anthropic, and as such gravely threatened with disappearance, inciting an immense and dangerous *ressentiment*.

5. *Guaranteeing the local integrity of an open exosomatic unit* – which is indeed the object of the Plaine Commune contributory learning territory – and doing so in order to integrate a local neganthropic economy into a macro-economy itself neganthropic, that is, *guaranteeing relations of scale between orders of magnitude respectful of localities and of the heterogeneity that they alone provide*, involves the challenge of *redefining computational processes and technologies of scalability*, such that they ought never short-circuit deliberative processes. They should never, in other words, proletarianize decision-making.

Virilio's words in 1977, in *Speed and Politics*, foreshadow everything we have been discussing here today,²⁶⁶ to which we must obviously add the questions raised by AI, which we will address in December as the question of artificial stupidity. In an upcoming seminar to be held in the Salle Triangle, I will try to show why we must protect what Jacques Lacan called 'extimacy',²⁶⁷ which amounts to the irreducible necessity of a private sphere based on the secret, on a secrecy so secret that even the one who possesses it is unaware of it: it is *hidden in the unconscious*. This *ultra-secrecy that founds the psychic apparatus* is also what I call the power of *infra-thin bifurcation*,²⁶⁸ insofar as it is the condition of every other possibility of bifurcating, and which is therefore what, more than anything else, must be protected.

Such protection, however, must not be limited to defending this psychic locality that is capable of bifurcating only through the branching of its desire: it also requires the protection of the ability to *share secrets* between friends, allies, associates, colleagues and so on. It is such *sharing* that enables the secret to be transformed into a bifurcation, through what I call, borrowing a term from Simondon, processes of *transindividuation*.

The goal of the Plaine Commune territoire apprenant contributif is to *constitute a network that would be founded on this dual protection, and would be physically localizable through decentralized data storage, forming a network between regions themselves networked*. This is what we are developing in partnership with Orange, in order to apply, to all kinds of neganthropic territorial activities tied to the contributory economy that this program has the primary goal of elaborating, technologies that we have been experimenting with, before testing them further with the *pharmakon.fr* organization, and with the Université de Compiègne. Our present goal is to bring this approach up to the level of scalability required by the *shift from the regional micro-economy to the new macro-economy required for what we call the Neganthropocene*, and in order to accomplish this we are working to develop adapted contribution technologies that break with the dominant model of social networks.

• • •

Let's conclude with two remarks on Bratton's analysis, which will lead to the addition of two supplementary theses. On the one hand, Bratton proclaims, by referring to Carl Schmitt, the possibility of a 'nomos of the Cloud', while on the other hand he speaks of the 'dire inevitability' of the computational structure of the totality to come.²⁶⁹

Both of these arguments must be contested:

- 1 For Schmitt, a *nomos* of the Cloud is simply impossible: the *nomos* is what can be constituted *only* on the basis of the earth. Of course, one must free oneself of all that is foreboding and frightening about such an assertion, especially after the Third Reich. Nevertheless, its force lies in the fact that it refers not just to the land [*terre*] but to the *locality of a negentropic-cum-neganthropic process*, giving itself a law with the goal of *forming a complex exorganism itself composed of complex exorganisms, themselves consisting in simple exorganisms and isolated exosomatic organs*, as Bratton himself says.

- 2 The form of computation derived from the exorganic functions exercised at the scale of the biosphere by the architectonics of the 'cloud' is in no way an 'inevitability': it is, on the contrary, *the very thing that must be changed*. And, given that NextLeap is a program supported by the European Union, it is appropriate to conclude with the affirmation that *only a reconceptualization of data architectures, and, more generally, of the architectonics that constitutes the computational epistēmē of capitalism, will open up a path that could lead us out of what has already been called the Trumpocene.*²⁷⁰

9 Capitalism as Epistēmē and Entropocene

1 Statement of the work program covered by this communication

The way capitalism has evolved in the twenty-first century spectacularly confirms, in every detail, the hypotheses laid out by Karl Marx in the *Grundrisse* with respect to: (1) automation; (2) the evolution of the economic function of knowledge; and (3) the corresponding transformations of value. Nevertheless, in 1857, and until the death of Engels, decisive concepts were lacking through which it would have been possible to undertake a *detailed functional analysis* of the evolutions anticipated by Marx. Today, we are finding these evolutions concretely expressed right before our very eyes, through the informational and computational transformations of technology that dominate *today's fixed capital*.

I propose to *describe* and *prescribe* this immense transformation via the following thirteen points:

- 1 Capitalism amounts to an *epistēmē*, materialized by the fixed capital of the reticulated apparatus of production that capital has become. This *epistēmē* hegemonically reconfigures *every instrument of calculation*, by functionally integrating²⁷¹ them as instruments of statistics, measurement, simulation, modelling, observation, production, logistics, mobility, orientation, bibliometrics, scientometrics, marketing, lifelogging (producing the 'quantified self') and so on.
- 2 Information is the 'allagmatic'²⁷² operator of this *epistēmē*, via computational technology that is perfectly homogenous with capitalism: with a capitalism that submits all those exchanges in which psychic life and social life consist to the calculations of the market. This calculation, through which *reticulated artificial intelligence* is set in place, is based on taking *cognitivism* as the general paradigm of all forms of knowledge.
- 3 The cognitivist *epistēmē*, however, is an anti-*epistēmē*: it develops only by installing a process of *generalized proletarianization*.²⁷³ The correlationist mythology of 'big data', as developed by Chris Anderson in 'The End of Theory',²⁷⁴ is a prime example of the way in which *ideology* is being

reshaped – both via the cognitivist paradigm and via marketing, itself now reticulated, mimetic and computational.

- 4 The cognitivist anti-*epistēmē* imposes *absolute non-knowledge* (the age of ‘post-truth’): it operates only through the *dissolution of all knowledge into and by calculation*, and, in so doing, it *accomplishes nihilism* – that is, the devaluation of all values. The anti-*epistēmē* of absolute non-knowledge concretized as fixed capital, however, ties the latter to entropy, as we shall see. To think [*penser*] this fact in order to overcome it – to take care of it in order to tend to it or to heal it [*panser*]²⁷⁵ – requires a *new critique* of Hegel, which would also be a new critique of *his dialectic*, which it is a matter of ‘transvaluing’ into a *pharmacology* in Socrates’s sense in *Phaedrus*, Derrida’s sense in ‘Plato’s Pharmacy’,²⁷⁶ and Deleuze’s sense in *Difference and Repetition*.²⁷⁷
- 5 The history of the concretization of this absolute non-knowledge coincides with the history of the Anthropocene.²⁷⁸ The latter is now reaching its limits, thanks to its disruptive acceleration, thereby showing itself to be an Entropocene. This Entropocene is characterized by the regression of knowledge, but, after knowledge is replaced by ‘skills’ or competences (that is, by capacities of *adapting to tasks* and to the *system* that realizes them), the latter find themselves in turn replaced by *algorithms*. This rise of algorithms constitutes the stage of the *generalized automation of fixed capital*, and it is leading to the collapse of wage labour, where the latter is what, since Roosevelt and Keynes, has been referred to as employment, understood as the condition of the ‘growth’ to be derived from ‘creative destruction’.²⁷⁹
- 6 Creative destruction, however, comes at the cost of the destruction of knowledge, leading to absolute non-knowledge, which engenders the Entropocene because the forms of knowledge thereby destroyed are those involved in the work activities through which what Georges Canguilhem called the technical form of life takes care of its own conditions of possibility: knowledge – beginning with biology – is a care that technical life takes of itself, by struggling against the entropy that its technical and artificial organs inevitably generate – whereas living nature seems to spontaneously (without being ‘aware’ of it) preserve its local anti-entropic capabilities.

- 7 The Entropocene names the disruptive stage of the Anthropocene as it reaches its vital limits, because *reticulated fixed capital*, which is a global technical system, *functionally short-circuits every social system*, and, along with them, all the deliberative processes in which they consist, all the forms of knowledge on which they rest, and all the forms of care they cultivate (justice, law, education, culture, urbanity and so on). In this *eschatology of the biosphere-cum-Entropocene*, capitalism is confronted with the *contradiction* and the *entropic contraction* that its thoroughly computational development contains, and continuously intensifies, as a *chaotic phase* – whose various social regressions are felt throughout the world as its symptoms.
- 8 A *leap* beyond this entropic situation is required, beyond this state of fact, a bifurcation from this chaos that would be capable of opening up a new era, upon which we shall bestow the name, ‘Neganthropocene’. To enter the Neganthropocene will require a complete redefinition of the relations between *epistēmē* and *tekhnē* on the basis of a pharmacological understanding of the latter, as well as a redefinition of the transformation of *tekhnē* into industrial technology, which Marx called ‘industrial capitalism’ or ‘large-scale industry’, and which Heidegger called ‘modern technology’ (*modernen Technik*) and *Gestell*. With the *generalized reticulation* of industrial technology via what we will hereafter call ‘digital tertiary retention’, based on the network and data architectures prescribed by the profitability requirements of shareholders, fixed capital has become *inherently and purely informational and computational*.
- 9 The *critique of the absolute non-knowledge* to which computational proletarianization gives rise must be built on a *critique of information theory*, inasmuch as the latter has always defined information as a *calculable signal*. To conceive information in this way (the advent of which Hegel, who recommends regularly reading the morning newspaper, has no inkling) is to dissolve knowledge insofar as the latter is irreducible to calculation. Participating in what Whitehead called the *function* of reason, where *synthetic* reason is not soluble into analytic understanding, knowledge is a generator of improbable, which is to say incalculable, bifurcations. This conception of knowledge is possible only in a *universe in concrescence*,²⁶⁰ that is, a

universe understood as *process*, wherein life creates localities that defer the rise of entropy qua increase of disorder, while *technical* life (that is, the life of the *producer*, as Marx and Engels put it at the beginning of *The German Ideology*) struggles against entropy through the *anthropization* of its milieu, which itself accentuates entropy, leading Claude Lévi-Strauss, at the end of *Tristes Tropiques*, to propose that anthropology might be renamed 'entropology'.²⁸¹

- 10 What Marx calls the producer is in the first place the producer of its own organs, and in this it is *exosomatic*. In the case of the exosomatic being, the issue is to get beyond Schrödinger's notion of the anti-entropy characteristic of life: living things are, in Schrödinger's analysis of life, those beings that generate *endosomatic organs*, organs that are *spontaneously and integrally anti-entropic* (except when they are diseased), that is, which exclusively serve to conserve the organism in its integrity. In the case of exosomatic organisms, which we will call *exorganisms*, the organs they produce are *artefacts* that produce new negentropic possibilities but *also* new entropic possibilities. But we must distinguish these contradictory possibilities of thermodynamic entropy and biological negentropy, as well as of entropy and anti-entropy as they are conceived in information theory: the contradictory character of the latter stems from its inability to think the specificity of exorganisms and their exosomatic organs. It is for this reason that we prefer to speak of *anthropy* and *neganthropy*.
- 11 The struggle against anthropy must become the object of a *neganthropology*, itself based on rethinking the concepts of entropy, negentropy and anti-entropy starting from the exosomatic perspective developed by Alfred Lotka in 1945.²⁸²
- 12 Overcoming the anthropic eschatological tendencies of computational, reticular capitalism requires the reconstitution of an *epistēmē* that would, on the basis of the tertiary retention integrated by fixed capital that has given rise to the Entropocene, be capable of *generating new forms of knowledge* characteristic of neganthropology, the latter constituting a set of therapeutic prescriptions (and economic arrangements of new knowledge) that aim to socialize the *pharmaka* that are these mechanical, analogical and digital

tertiary retentions integrated by platform capitalism (as we shall see below).

- 13 Such a program involves a detailed specification of the features of platform capitalism. It presupposes a *critique of data and network architectures*, as well as of their underlying architectonics, in order to prescribe the principles of a process of *organological invention* conducive to the intensification of neganthropological potentialities and to the limitation of the anthropic tendencies these induce. Such an approach is exemplified by the work of Yuk Hui²⁸³ – whereas the ‘accelerationists’ understand nothing of the challenge this involves.²⁸⁴

2 Complementary remarks on cognitivism

With the recent developments in probabilistic mathematics applied to the data economy, cognitivism in its various senses²⁸⁵ has become neo-computationalist. This is what is now being concretized as *new reticulated artificial intelligence* – which at the Pompidou Centre in December I will analyse in terms of *artificial stupidity*, as a radicalization of what Alvesson and Spicer have referred to as ‘functional stupidity’,²⁸⁶ which is the effective reality (*Wirklichkeit*) of cognitive capitalism.

Artificial automated stupidity is the concretization of the anti-*epistēmē* that is thoroughly computational (algorithmic and reticulated) capitalism, where the ‘post-truth’ ordeal is imposed as the eschatology of *generalized de-noetization*, itself the result of *generalized proletarianization* – occurring just as we enter the Entropocene, recently referred to in *The Guardian* as a Trumpocene.²⁸⁷

In order to develop these points – within the limits of our meeting here – we must return to three questions:

- cognitive capitalism;
- the notions of the proletariat, proletarianization and the power of the negative;
- the dialectic of *Herrschaft* and *Knechtschaft*.

3 Pharmacology of cognitive capitalism

Computational and informational capitalism is what Antonio Negri (along with many others) calls cognitive capitalism.²⁸⁸ The latter

results from the digital *becoming* of hyperindustrial society. This digital becoming constitutes the most recent stage of a *process of grammatization* that requires detailed study. Generalized digitalization begins in 1993 with the opening of the World Wide Web, thereby setting up what Simondon called an associated milieu. Two contradictory tendencies cut across this new associated milieu:

- On the one hand, *contributory practices* (anticipated by ‘free software’ as early as 1983 in the context of the internet), undertaken in all fields, which effect a break with the structural and sequential opposition that lies at the origin of proletarianization and defines the industrial economy: the mutual opposition between design, production and consumption. This transformation of the relations of production is a *de-proletarianization* to which ‘bottom up’ innovation will later be related, itself then followed, in a similar way, by ‘open innovation’. New forms of ‘living labour’ thereby emerge, and, with them, positive externalities, for instance in the form of wikis and the social web, an emergence which, therefore, occurs outside the sphere of production as it was analysed by Marx and Engels.
- On the other hand, this technogeographic associated milieu, to which, as a process of functional integration, all human resources must submit, is a process of *extreme and generalized proletarianization* that reduces *every* kind of activity to an information chain capable of being treated algorithmically at near light speed, operating at the scale of the planet via intensive computing, machine learning, reticulated artificial intelligence and so on – all of which *completely inverts* the processes described in the preceding point as contributory practices. It seems, in this instance, that the new associated milieu made possible by the web turns contributors into functions of the system, in precisely the way Marx described in the unpublished sixth chapter of *Capital* (1863–66), but where it would be possible for us to replace the word ‘worker’ with the word ‘contributor’:

The situation looks quite different in the valorization process. Here it is not the worker who makes use of the means of production, but the means of production that make use of the worker. Living labour does not realize itself in objective labour which thereby becomes its objective organ, but instead objective

labour maintains and fortifies itself by drawing off living labour; it is thus that it becomes *value valorizing itself, capital*, and functions as such.²⁸⁹

The repetition of this inversion of relations – between what we will here refer to, not as living labour on the one hand and objective labour on the other, but as, on the one hand, *primary and secondary retentions and protentions*, and, on the other hand, *tertiary retentions and protentions* – is characteristic of the effects provoked by a new *pharmakon*.

The *new organization of fixed capital* has become all the more complex and opaque as a large part of its apparatus comes to be ‘privatized’ in the form of consumer items such as smartphones, and as it is reordered on a global scale as a function of its infrastructure becoming, in the Entropocene, biospherical: at this point we could refer to *soft capital*, or *fluid capital*, if not *liquid*. The Entropocene consists, through the reticulation of fixed capital, in planetary exorganisms that exist on the functional scale of the biosphere. To move beyond this Entropocene, we must analyse the pharmacological duplicity of fixed capital, which has become highly flexible and plastic, both hyper-centralized via cloud computing and arche-distributed via exosomatic organs, such as, today, the smartphone, or, tomorrow, implants – at least if we are to believe Elon Musk’s Neuralink project.²⁹⁰ But all of this requires us to take up the question of the *pharmakon* from its inception, at the origin of Western philosophy, in Greece.

The question of the *pharmakon*, as it was posed by Socrates in the late fifth century BCE, is the first formulation of the paradox of proletarianization as disindividuation. The *pharmakon* is *required* by knowledge insofar as the latter must be exteriorized and spatialized (that is, *materialized*²⁹¹) through the work of a *différance*.²⁹² Through this *différance*, which in this way is *noetic*, mental and temporal flows and fluxes, composed of primary and secondary retentions and protentions,²⁹³ are *exteriorized, spatialized and organized upstream and downstream of the process of interiorization in which knowledge consists*.

For an interiorization to occur there must be an exteriorization, where this interiorization has two ‘moments’, as Hegel understood:

- on the one hand, interiorization as apprenticeship, as learning, that is, the internalization of *inherited* noetic activities;
- on the other hand, interiorization as noesis, that is, as the first moment of a *new* noetic process (this is what opens the chapter on ‘Sense-Certainty’ in the *Phenomenology of*

Spirit), forming what, with *Ars Industrialis*, we call a circuit of transindividuation.²⁹⁴

I am not going to expand further on these themes, which are my starting points, and which have been explained on a number of occasions.²⁹⁵ What I must reiterate, however, is the following: if capitalism is *possible*, particularly in its industrial form, that is, so that it becomes possible to *take progressive control of all economic functions* (design, production, logistics, consumption) through the calculation enabled by *computational technologies*, this is because all these functions are formalized through a protean grammatization process that rests on *hypomnesic tertiary retentions* (mnemotechnologies) of four kinds:

- 1 Literal, printed tertiary retention (the condition, as Max Weber described, of capitalism's emergence from out of the Reformation, equipped with accounting *hypomnēmata*).
- 2 Mechanical tertiary retention (combining Watt's steam engine with Vaucanson's automatons, which lead to the mechanical loom and then the automatic machine in general, including Babbage's difference engine).
- 3 Analogue tertiary retention (enabling the development of the culture industries, and hence the proletarianization of consumers, deprived of their social knowledge and of what Amartya Sen calls 'capabilities').
- 4 Digital tertiary retention (recoding the whole ensemble, and transforming all economic functions by integrating them in real time, via feedback loops of the kind conceived by Norbert Wiener in 1948, and by concretizing them – in the sense both of Simondon and of Whitehead – as the 'data economy', 'smartification' and 'industry 4.0', the major laboratories of which are China and Singapore).

It is the *tertiarization* of primary and secondary retentions and pro-tentions that leads to proletarianization. This is the entire issue in:

- 1 The key assertion in *The Communist Manifesto*: describing the fate of knowledge as generalized proletarianization,²⁹⁶ which *destroys* knowledge, and does so by transforming it into fixed capital, that is, into a computational system of tertiary retention that has now become soft, flexible, plastic and ultimately liquid, which is to say, speculative and

insolvent, producing ‘liquidities’ at the cost of a massive and systemic destruction of *consistences*.

- 2 The visionary analysis of the *Grundrisse*: extrapolating the consequences of automation, through which fixed capital tends to lead, structurally and dynamically, to an impasse that only a *revolution of work* could overcome.²⁹⁷ (This interpretation of the stakes of the ‘Fragment on Machines’ is obviously partial, in both senses of the word: our goal, here, is precisely to defend the need to take a step beyond the interpretation that Marx, on his own, was capable of putting forward – and to do so by introducing the questions of exosomatization and neganthropology, as forming the new horizon through which alone it will be possible to overcome the Entropocene.)

So-called *cognitive capitalism* is what bears these two realities at once:

- On the one hand, digital tertiary retention, which constitutes the *epistēmē* of capital and capital as *epistēmē*, is an *anti-epistēmē* because, as instrument of hyper-control and generalized proletarianization, it amounts to the most advanced stage of capitalism qua process of proletarianization, that is, as a process that destroys knowledge.
- The digital tertiary retention developed by capital, which it develops as a *new basis* of fixed capital (one that Marx could never have anticipated), is, nevertheless, a *pharmakon*, and one with the potential to completely invert this state of fact, through the establishment of a *new state of economic law*: the establishment of such a law is not required in some edifying way, as some means of respecting the concerns of social justice, but as the *obligation to find a new economic rationality*, which must lead to a *revalorization of work* and to a *revaluation of value*.

This last point ought to pass through a consideration of Nietzsche, but unfortunately I will not have time to develop this now.

4 What is revolution?

On the basis of these considerations, we must elaborate three points, which open up a new economic perspective that is certainly *not* an exit from capitalism, but the opening of another path from within the Entropocene, faced as it is with the Trumpocene, which is itself an

impasse. This other path is that of the Neganthropocene as new revolutionary project – which could prescribe terms to Chinese strategic policy in terms of Internet Plus, generalized automation, ‘smart cities’ and *neganthropic industries* – within an *economy of contribution* founded on transitional investment towards the Neganthropocene.

We must *completely reconsider the following three issues*:

- the *power of the negative*;
- the proletariat;
- what has wrongly been called the dialectic of master, *Herren*, and slave, *Knecht*.

1. Let us start from the last of these points: the *Knecht*, who is *not at all* a slave (*Sklave*),²⁹⁸ is the one who, by his *work*, develops *knowledge* that *exceeds* the master. He can, then, be neither a proletarian nor a slave. It is in reality the *bourgeois* who, at first an artisan, and *having emancipated himself from serfdom*, constitutes the ‘bourgs’, which, becoming cities, will engender the various industrial revolutions, and which will constitute the bourgeoisie as the revolutionary class in the sense explained in *The Communist Manifesto*.

By referring the figure of the proletarian to that of the *Knecht*, and in so doing ascribing to it the power of the negative, Marx and Marxism lock themselves into an impasse on the basis of a misinterpretation of Hegel: if the proletarian is the one who is deprived of knowledge by grammatization, that is, by mechanical hypomnesic exosomatization, which expropriates this knowledge by inscribing it in the machine as fixed capital, in no case can this proletarian become the power and the revolution of the negative in some way that would enable the overcoming of capitalism.

2. It then becomes a question of *de-proletarianization* through contributory inversion, which is not a dialectical reversal but a quasi-causal appropriation in the sense that Deleuze takes from Stoicism and Nietzsche.²⁹⁹

It is a question of *quasi-causally inverting the play of literal, mechanical, analogical and digital hypomnesic tertiary retentions*, functionally integrated by the digital and the reticulation it makes possible (as interoperability via protocols and formats³⁰⁰), this play having become the infrastructural apparatus of the general intellect. And it is a question, then, of constituting a new age of noesis (here we must show that noesis realizes itself as the process of the exosomatization of the functions and faculties of reason, in the sense of Kant

and of Whitehead, but for this I refer to a lecture given at Berkeley in October 2016³⁰¹).

To organize *an economy founded on de-proletarianization*, and as an economy of contribution: this is what we are currently doing in Seine-Saint-Denis, in the northern suburbs of Paris, in a region of 410,000 inhabitants, where it is a matter of valorizing work at a moment when employment as the vector of redistribution – conceived by Keynes as a function of growth in order to make Fordist Taylorism solvent – is now called into question by an evolution that Marx anticipated as early as 1857.

3. Such an evolution is possible, however, only on the condition of redeveloping, on new epistemic and epistemological bases, the data and network architectures³⁰² that currently constitute platform capitalism as analysed by Benjamin Bratton.³⁰³ On this point, I refer to the lecture I gave at the Pompidou Centre in the context of the NextLeap program,³⁰⁴ from which I would like to highlight two points:

- On the one hand, such an *alternative design of fixed capital in the midst of its liquefaction*, so that it could become a *multi-territorialized contributory platform* constituting *knowledge cooperatives* everywhere, requires us to take up the analyses of Adam Smith, Andrew Ure and Marx in terms of the perspective of Alfred Lotka,³⁰⁵ that is, by reviving the fundamental thesis of *The German Ideology* from a biological and extra-biological perspective, which necessarily goes through Nicholas Georgescu-Roegen.³⁰⁶
- On the other hand, *value* must then be totally redefined, in order to *invest* in the Neganthropocene *on the basis of a new theory of knowledge* inasmuch as the latter constitutes the *functions of exorganological life*, in the sense in which Canguilhem defines the role of biology in technical life, and which produces what is not just negentropy locally struggling against the entropic flow that fundamentally characterizes the process of the expanding universe (this is what Engels excludes from the *Dialectic of Nature*, as I have shown in my seminar in Nanjing in 2016), but negentropy inasmuch as it takes care of exosomatic organs in order to limit their *anthropic effects*, which is to say their *proletarianizing effects*, and to increase their *neganthropic effects*, which is to say their *knowledge-generating effects*.

For this, we must begin by *completely reconstructing the architecture of academic organologies* (a project that Nietzsche outlined in various texts³⁰⁷), which we are currently undertaking in Plaine Commune with contributory annotation platforms.

5. Conclusion

The question of fixed capital, and the general intellect contained therein, is not founded in an adequate way on documentation or research, due to Marx's profound ignorance of the question of tertiary retention, and this is what, in Book I of *Capital*, leads him into a regression compared with the positions he maintained in *The German Ideology* – in particular with respect to the bee and the architect: this is what I have tried to show at the end of *Automatic Society, Volume 1*.³⁰⁸

If we follow the hypotheses of the *Grundrisse*, but do so from the perspective of contemporary realities, the question is not the power of the negative that the proletariat would somehow embody, but the power of the *positive* that the *pharmakon* would contain as the possibility of a reversal opening up the formation of a communist economy that would itself amount to a new therapeutics. But, in this case, it would be better to refer to an 'affirmative reversal' rather than to the 'positive', because 'positive' remains within the *oppositional* dialectic of negative and positive, that is, within metaphysics. The 'affirmative' raises a different question, which is, obviously, that of Nietzsche. And the latter should here be mobilized for two main reasons:

- on the one hand, because thoroughly computational capitalism *accomplishes* nihilism;
- on the other hand, because it does so as a *levelling of negativity by the power of averages*.

Marxism recuperates the idealist Hegelian dialectic by reversing it, but in so doing maintains its metaphysical character: by ignoring its pharmacological, tragic dimension. The latter is a question not of the power of the negative but of the inversion of the potentialities of fixed capital generating an opportunity for de-proletarianization. And this possibility in fact becomes a necessity thanks to the logic of automation described in the *Grundrisse*, but this is something that the fundamentally Hegelian dimension of Marxist philosophy ultimately obscures.

Cognitive capitalism, in fact, obviously requires and initiates a revolutionary movement of de-proletarianization – otherwise it would not

be ‘cognitive’, in the sense of Negri and Vercellone – but, at the same time, this state of fact is not ‘assumed’ as such, confronted as we are with that other state of fact that is the generalized proletarianization generated by purely computational capitalism. De-proletarianization is therefore not claimed as the objective of a new state of law – perhaps because challenging and calling into question the ‘revolutionary power of the proletariat’ (whether it is called the ‘*working class*’ or simply ‘*work*’, which is more often than not confused and confounded with employment and wage-labour) is a very large and difficult operation, and one that passes, precisely, through questioning and challenging the dialectic of *Herrschaft* and *Knechtschaft*.

Behind the misinterpretation of this relation between *Herrschaft* and *Knechtschaft*, a relationship that, ultimately, is not dialectical, and where both Marx and Hegel lack the concept of tertiary retention, there lies the question of knowing what *epistēmē* means – if it is true that it is the *Knecht*, the producer, who engenders it, whereas philosophy will always have posited that it is the *Herren*, devoted to *skholē* and *otium*, who has done so.³⁰⁹

The *epistēmē* that is capitalism today is negative and constitutes an absolute non-knowledge, that is, an anti-*epistēmē* and an eschatological limit of toxicity, engendering the Entropocene qua Trumpocene. This is so because this *epistēmē* dissolves into calculation that which, in knowledge, remains incalculable – incalculable because stemming from those neganthropological potentials that make bifurcation possible, and hence which, alone, provide any hope of finding a way out of the Entropocene become Trumpocene. Such are the stakes of a war of noesis against de-noetization.

To de-proletarianize means to re-establish knowledge, a knowledge that is always limited, multiple, distributed and impure, because it is pharmacological and always provisional, because it is neganthropological, that is, always on the way to becoming a non-knowledge in the form of anthropic dogma. Such a re-establishing of knowledge can be founded only on a contributory economy and a politics of neganthropy.

Part Two

Screens, Dreams, Power
and Powerlessness

10 The Organology of Dreams and Arche-Cinema

I argued in *Le temps du cinéma*, that is, in the third volume of *Technics and Time*, that we must refer to arche-cinema just as Derrida spoke of arche-writing. I propose today and in principle that the dream is *the primordial form of this arche-cinema* – and this is why *an organization of dreams* is possible. The arche-cinema of consciousness, of which dreams would be the matrix as arche-cinema *of the unconscious*, is the projection resulting from the play between what Husserl called, on the one hand, primary and secondary retentions,³¹⁰ and what I, on the other hand, call tertiary retentions, which are the hypomnesic traces (that is, the mnemo-technical traces) of conscious and unconscious life. There is arche-cinema to the extent that for any noetic act – for example, in an act of perception – consciousness *projects* its object. This projection is a *montage*, of which tertiary (hypomnesic) retentions form the fabric, as well as constituting both the supports and the cutting room. This indicates that arche-cinema has a history, a history conditioned by the history of tertiary retentions. It also means that there is an organology of dreams.

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A temporal process occurs through the continuous aggregation of primary retentions: time passes only because the present instant retains within it the preceding instant. In the temporal flux or flow of sensible intuition that is perception, consciousness apprehends the perceived by primarily retaining *data* that it selects on the basis of those secondary retentions (memories of past experience) that constitute the selection criteria in the flow of primary retentions.

Each consciousness is constituted from specific secondary retentions that weave its experience, that is, its memory. It is for this reason that, confronted with the same object, two different consciousnesses experience two different phenomena: the phenomena are projected by the consciousness. This projection also projects protentions, that is, expectations. The arrangement of primary and secondary retentions with protentions constitutes an attentional form: attention is what is woven between retentions and protentions.

Just as it is necessary to distinguish between primary retentions and secondary retentions, so too is it necessary to distinguish primary protentions and secondary protentions. Secondary protentions are contained and concealed in secondary retentions, whereas primary

protentions are inscribed with primary retentions – so that they activate, in passing into secondary retentions, associative modalities such as those described by Hume (contiguity, resemblance and causality).³¹¹

On the basis of an object, consciousness projects a phenomenon that is an arrangement of primary and secondary retentions and protentions, and the same object will, each time, result in different phenomena for different consciousnesses. Furthermore, if one and the *same* consciousness repeats an experience of the same object at different times, a different phenomenon will be generated each time. This is so for two reasons:

- firstly, the consciousness that encounters an object for the second time is no longer the same as the one that encountered it the first time, for the precise reason that the primary retentions and protentions from the first encounter have since become secondary retentions and protentions, which in the second encounter supply new selection criteria for the primary retentions and protentions of the object – of which the phenomenon is different each time;
- secondly, the way in which secondary retentions select primary retentions in the temporal flow is the result of the play between *two types of secondary protentions contained and hidden in secondary retentions*: some of these secondary protentions, which become practically automatic, constitute *stereotypes*, that is, habits and volitions, while others constitute *traumatypes* – which are either repressed, or expressed by default in symptoms and fantasies.

From all this it follows that the same object can:

- either activate *traumatypes*, which means that the phenomenon that it engenders constantly differentiates itself by intensifying itself, and that consciousness projects itself into the object *by individuating itself with it*;
- or activate *stereotypes*, which means that the phenomenon of the object is its impoverishment, and that the attention that consciousness has for this object fades away, disindividuating itself by reinforcing these stereotypes.

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The constitution of phenomena, woven from stereotypes and traumatypes that a consciousness thus projects onto an object, is the result

of attentional forms that are conditioned in specific ways by tertiary retentions that support secondary retentions. These are in fact woven from *collective* secondary retentions, which are elaborated and transmitted from generation to generation, and which form *symbolic milieus* metastabilizing what Simondon called the transindividual, that is, signification [*signification*].

For example, the memory of secondary retentions is to a significant extent composed of verbal traces that are themselves conditioned by a language that is inherited by the consciousness – or what I call the psychic individual. To put this in the language of Gilbert Simondon, psychic individuation is always inscribed in processes of collective individuation through which it shares collective secondary retentions, which form *significations*, that is, the transindividual.

The transindividual is formed in and by circuits of transindividuation at the core of which there forms a compromise between diachronic traumatypes and synchronic stereotypes – stereotypes forming *significations* as common usages, and traumatypes forming *meaning* [*sens*] as *object investments that disrupt common usage*.

The transindividual can metastabilize itself only because it is supported by tertiary retentions, that is, technical supports of various kinds. Technical objects in general are themselves such supports, and they form what Leroi-Gourhan³¹² described as the third memory of technical and noetic life, appearing some two million years ago: beyond the common genetic memory of the human species and the epigenetic memory belonging to each individual human, there is an epiphylogenetic memory that constitutes the various forms of inherited and transmitted human knowledge, and through which the transindividual is metastabilized.

It should be noted here that technical and hypomnesic objects play a major role in the dream as analysed by Freud in his *Interpretation of Dreams*, and that desire is constituted in Freud around the fetish, that is, the artefact – which means that, like the artefact, the libido is detachable and can move from organ to organ (both artificial and corporeal).

Rupestrial mnemo-technical supports, cave paintings, appear around thirty thousand years ago, and these project mental contents outwards, constitute *hypomnesic* tertiary retentions and initiate a process of grammatization.

Grammatization, as I use the term, refers to the process by which the mental temporal flows experienced by the psychic individual are recorded, reproduced, discretized and spatialized. When we see the Chauvet cave paintings, we are aware that what we see are the traces of what was seen and experienced by those who painted them. We

are aware that we are accessing a *new empathic possibility* that did not exist prior to the Upper Palaeolithic era, even though it is also true that those tertiary retentions that every object constitutes already allow us to access the artificial memory of a form of life itself artificial, and of which we are the heirs.

The appearance of hypomnesic tertiary retentions results in new regimes of individuation through the play of the primary and secondary retentions and protentions in which attention consists: it leads to *new attentional forms*. On the basis of the example of the melody that Husserl used to construct his concept of primary retention, I have tried to show that tertiary retention conditions the play of primary retention and secondary retention, and therefore the play of primary protention and secondary protention: I have highlighted the fact that the *analogue* tertiary retention in which the phonogram consists, insofar as it enables the *identical repetition* of the same musical temporal object, results in a new primary and secondary retentional and protentional experience of a piece of music. In fact, each repetition *manifestly* generates a difference from out of one and the same object, and this experience of the production of difference through analogue repetition constitutes a new experience of music itself – a new form of experience that is a new form of attention, dating very precisely from 1877, and there is no doubt that this contributed to the musical experience inaugurated by Schönberg as well as to what is called ‘acousmatic’ music.

This new attentional form in fact considerably dramatizes and intensifies the difference between two forms of repetition (those referred to by Deleuze in *Difference and Repetition*³¹³): in the first case, stereotypical protention repeats itself and exhausts the object because the phenomenon it generates is a little weaker each time until in the end it disappears; in the other form of repetition, however, the object generates new phenomena every time, intensifying and deepening its difference.

Similarly, cinema is a new experience of life that begins in 1895. These dates, 1877 and 1895, constitute two immense turns in the *organological history of the power(s) to dream*.

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Between stereotypes and traumatypes there is play involved in the putting to work of secondary retentions and protentions that select primary retentions and protentions, and *this play is overdetermined by tertiary retentions as organological conditions of repetition*. As such, a tertiary retention always constitutes a kind of transitional object, in the Winnicottian sense according to which the first retentions and

protections that form the baby's psychic apparatus are articulated with the retentions and protections of its mother through the transitional object that opens the transitional space of play.³¹⁴

I argued in *What Makes Life Worth Living* that the transitional object is a *pharmakon*, and in fact the primordial *pharmakon* – just as for Plato writing was a *pharmakon*, and just as all tertiary retention is a *pharmakon*, that is, a poison and a remedy.³¹⁵ Winnicott showed that the transitional object, which is the condition of the formation of the infantile psychic apparatus, can also become a pathogenic factor if the mother fails to locate the therapeutic value of the object and so allows it to become an object of pure addiction.

Tertiary retention, which is itself irreducibly pharmacological, is what Socrates grasped for the first time in the *Phaedrus* through writing – this being a *literal* (that is, lettered) form of tertiary retention. Socrates showed that literal tertiary retention can bring about short-circuits in the play of psychic secondary retentions and can result – via collective secondary retentions that form *topoi* (commonplaces) – in stereotypical ways of selecting primary retentions, that is, it can disindividuate collective individuals and psychic individuals, and transform them into crowds and masses.

It is because analogue tertiary retention is also such a *pharmakon* that Benjamin could be concerned about the importance of radio to Italian fascism, that this radio could support the language of the Nazi Third Reich, as Viktor Klemperer described,³¹⁶ and that Adorno and Horkheimer were able to suspect cinema of short-circuiting the transcendental imagination.

And yet, I argue that tertiary retention in general, and in particular literal tertiary retention, analogue tertiary retention and digital tertiary retention, all also constitute positive pharmacological possibilities, that is, they generate new attentional forms, forming therapeutic practices from those *pharmaka* that are tertiary retentions, and of which the cinematic art is one case.

From these general considerations, I would like now to return to the question of arche-cinema, of which the dream is the primordial form, in order to pose the question of an organology of the dream in general. And, on the basis of this question, I would like to investigate *the future of cinema in the epoch of digital tertiary retention*.

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I argued in the third volume of *Technics and Time* that Adorno and Horkheimer, by placing themselves within the Kantian perspective on the transcendental imagination, closed off all possibility of thinking a positive pharmacology of the cinema – that is, of the cinematic art

itself.³¹⁷ For in fact, the cinematic *pharmakon* as art is what makes it possible to struggle against the cinema as toxic *pharmakon*, that is, as what enables the short-circuiting of the play of the traumatypical secondary retentions and protentions of psychic individuals by reinforcing their stereotypical secondary retentions and protentions.

Adorno and Horkheimer did not take into account that the three syntheses of the imagination described by Kant presuppose a fourth synthesis, which I call the technological synthesis of the imagination, and which is that of tertiary retention. The first three syntheses (apprehension, reproduction and recognition) describe and correspond to the play of primary retention (apprehension), secondary retention (reproduction) and protention (recognition). I have tried to show, however, by re-examining the Kantian example of numeration, that the schematism, as projection by the transcendental imagination of pure concepts of understanding in the ‘manifold of intuition’ (that is, in the retentional flow that constitutes phenomena), presupposes schemas that are themselves constituted through tertiary retention – and on the basis of sensorimotor schemas.³¹⁸

The consequence of this point of view is that so-called ‘transcendental’ imagination presupposes a primordial exteriorization of memory *and therefore* of the imagination itself, that is, of anticipation and temporalization, such that, passing through artefactual schemas configured by technical organs as tertiary retention, it is supported by a spatialization.

Tertiary retention in general is the spatialization of time enabling its repetition and exteriorization, and the trans-formation of the *time* of retentions and protentions into a *space* of retentions and protentions. In a general way, all technical production of the technical form of life, by the desiring and dreaming beings that we are, constitutes such a spatialization of experience and thereby also enables its inter-generational transmission: such is epiphylogenesis, which constitutes the origin of what Canguilhem called the technical form of life insofar as it breaks with the conditions in which life had evolved up to that point – it breaks with evolution as conceived by Darwin. It is this rupture that constitutes arche-cinema, *establishing a libidinal economy of movement*.

What I call tertiary retention is what Derrida called the supplement insofar as it has a history, that is: as the genesis of technical concretizations of arche-writing (or the arche-trace). I am not in complete agreement with Derridian theory *stricto sensu* to the extent that this theory does not seem to me to distinguish primary retention, secondary retention and tertiary retention as such. In this, my ‘theory of the arche-trace’, so to speak, which is not only arche-writing but

arche-cinema, that is, a system of editing and post-production of primary, secondary and tertiary retention and protention (which constitutes differentiated regimes of traces), differs considerably from the exposition in *Of Grammatology*, above all because I think the supplement essentially in relation to tertiary retention, that is, to technics, whereas for Derrida the arche-trace constitutes the living trace in general – well before the appearance of tertiary retention.

In any case, within this framework, the history of the supplement means the history of tertiary retention, and it is necessary to distinguish between epochs. In particular, the epoch of grammatization must be distinguished: grammatization as the capacity to project mental temporal contents into spatial forms. It seems that this possibility, which appeared during the Upper Palaeolithic, brought about the emergence of what the archaeologist Marc Azéma describes in *La Préhistoire du cinéma*³¹⁹ as the origin of cinema, insofar as it brought with it the discretization and proto-reproduction of movement, of which that cinema that appeared in industrial form in 1895 would be the mechanical culmination.

In other words, arche-cinema – which constitutes the omnitemporal conditions in which, in a general way, the technical form of life (which is also the noetic and oneiric form of life, that is, the form of life that desires), rests on processes of the *projection through montages* of primary, secondary and tertiary retention and protention – was concretized in the form of *retentional systems projecting and spatializing movement* in prehistoric caves (on the walls of these caves), and this led, eventually, to movie theatres and movie screens as we know them today, as phenomena typical of the twentieth century (in the sense stated by Godard).

It should be noted here that this cinema of caves and theatres is staged by Plato at the beginning of Book VII of the *Republic* as a kind of dream: as the dream of that dream that would be the *lie of life lived in the cave* – that is, in the *pharmakon*. Now, we see that whereas the philosopher wants to leave the cave, the film-lover, the *amateur de cinéma*, would like to get behind the camera or into the screen: what the film-lover loves is the *pharmakon* and the pharmacological condition itself *insofar as it is also the condition of desire*.

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We must now return in a more precise way, however, to the question of knowing in what grammatized tertiary retention consists, so that we may attempt to grasp what is at stake with the advent of digital tertiary retention in the history of cinema.

There are epochs of tertiary retention, and these are the result of the ‘organo-genesis’ in which consists the transformation of psychic and social organizations that result from the transformation of technical and technological organs. In a general way, the becoming of the *pharmakon* that is tertiary retention is overdetermined by the play of psychosomatic organs, technical organs and social organizations. The relations between these three types of organs are regulated by ‘therapeutics’ that define social organizations through social systems (in both Niklas Luhmann’s³²⁰ and Bertrand Gille’s³²¹ sense of ‘social system’). Such therapeutics, which aim to strengthen the curative aspect of *pharmaka* and to limit their toxicity, are libidinal economies, themselves conditioned by the organology of tertiary retention, which means that, in each epoch, an organology of the dream concretizes and specifies the primordial matrix of arche-cinema.

In other words: *arche-cinema* constitutes the general principles by which primary, secondary and tertiary retention combine, *irrespective of the form of tertiary retention. The history of the supplement*, however, which implements this arche-cinema, that is, this libidinal organization of technical life in general, is what is concretized during the course of organo-genesis – and notably as what since 1895 we refer to as ‘cinema’. We, however, find ourselves living in 2012, that is, in the epoch of *digital* tertiary retention, and this makes possible, among other things, a *cinema without film*.

What type of cinema might emerge from this new stage of the history of the supplement as the concretization of the arche-cinematic power to dream? To try and pose this question correctly, we must return to the history of tertiary retention such as it is inflected through grammatization.

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A text is a fabric woven from literal tertiary retentions constituting a spatial linguistic object, whereas oral speech is a temporal linguistic object. When a reader reads a text, this spatial object is *re-temporalized*: reading is the transformation of space back into the time of reading. A film, too, is a spatial object that can be re-temporalized only via the mediation of that piece of apparatus we call the projector, just as playing a record requires a turntable. In general, however, whereas I *myself* play my records on my own turntable, films are on the contrary screened on a projector operated by a projectionist, who does so on behalf of the movie-going public in the movie theatre.

In all of these cases, re-temporalization constitutes a projection in the course of which readers, listeners and spectators project their own secondary protentions and retentions into the textual, musical

or cinematic flux, and select primary retentions, which then generate primary protentions. Consequently, the fact that these selections are each time singular (conditioned by the retentional and protentional characteristics of each of us) means that nobody ever reads the same book as anyone else, or hears the same music, or sees the same film.

And yet, a book, a piece of music or a film have effects on their public, their audience, that *seem* to go beyond the diversity of ways that these effects are experienced. This is so because:

- on the one hand, each type of tertiary retention configures attentional forms that are specific, but common to those who practise this tertiary retention: attention is what results from the play of (primary and secondary) retention and protention in general, and the various types of tertiary retention, by conditioning this play, thereby constitute attentional forms;
- on the other hand, a writer, a musician or a filmmaker in each case mobilizes a common retentional and protentional ground (or fund) constituted by proto-retentions and proto-protentions, typical of a cultural region and an epoch, and which itself takes shape on an arche-retentional and arche-protentional ground, that is, on the basis of archaic elements that derive from what Simondon called the 'pre-individual' (under the influence of Jung and his theory of individuation).

In the course of a projection, whether of a book, a record or a film, the play of primary, secondary and tertiary retention enables the projection of *repressed* elements, individually as well as collectively. This is why I say, in Ken McMullen's film *An Organization of Dreams* (2009), that a film is always the arrangement of an individual history and a collective history. Conversely, and through introjection, the viewer of a film interprets his own retentional and protentional funds on the basis of the transindividual material that is presented during the screening and that comes to meet the audience like an event.

Cinema, however, is a *pharmakon*, as Frank Capra showed:

Film is a disease. When it infects your bloodstream, it takes over as the Number One hormone; it bosses the enzymes; directs your pineal gland; plays Iago to your psyche. As with heroin, the antidote for film is *more* film.³²²

And this means that the cinematic experience can either reinforce stereotypes held by the public, or, on the contrary, put to work its

traumatypes. In order to examine these questions, which will lead to the question of the cinematic condition in the epoch of digital tertiary retention, it is necessary that we more closely analyse the organology and pharmacology of the cinema as an *industry* of analogue tertiary retention at the service of the *consumerist* libidinal economy, that is, as *destructive* of this economy, as destructive of the libido insofar as it is an economy of the drives, and, finally, as destructive of *attention* insofar as, as the arrangement of psychic retention and protention forming motives (objects of desire) from the fabric of collective retentions and protentions, it takes care of its objects insofar as they are *objects of desire*.

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Cinema is seen by Adorno and Horkheimer as a functional element of a system whose aim is to *disseminate an ideology* and *stimulate consumer behaviour*. This view of cinema is not fundamentally different from that of the French New Wave, except that the latter saw cinema as a *pharmakon*, and not just as a poison (this pharmacology, for example, forms the background of Godard's *Contempt*, 1963).

The cinematic art, according to Capra, struggles against the disease that is cinema with the means of cinema. This pharmacology, I suggest, is that of desire, that is, of the dream. What is a dream? It is a *compromise* between traumatypes buried and repressed in the unconscious, and the stereotypes in which they are clothed in order that they may manifest themselves as 'latent content'. The manifestation of this content remains latent, so that it may be translated in waking life into action, and interpreted through our actions – which may include speaking, as in the psychoanalytic cure.

In other words, we must think of this as a loop (that is, a circuit) the moments of which must not be separated – and this is what Simondon taught us in *Invention et imagination*: for Simondon, in the imagination, every image founded on sensorimotor schemas, and passing through what he calls the image-object, results in an invention, that is, an individuation – and a film is such an individuating invention.

A film is a kind of dream had in common, a daytime dream, via the means of the industrial production of tertiary retentions that are themselves industrial. Insofar as it is a dream, film manifests a desire – a desire that we imagine to be that of a public, that is, of an epoch, and not just that of a filmmaker. This is why Godard, under the (false) belief that he was citing Bazin,³²³ could say that 'cinema replaces our gaze with a world that conforms to our desires'.

In reality, it is a matter of the desire of the filmmaker in that – like the desire of any artist – he or she succeeds in sharing this desire

through their work, and, in so doing, the filmmaker becomes a vector of the transindividuation of his or her epoch. Furthermore, this transindividuation works by socializing and transindividuating the tertiary retentions of the epoch, reinforcing psychic individuation as well as collective individuation, rather than disindividuating them, that is, reinforcing stereotypes.

Adorno and Horkheimer argue that, *more than anything else*, cinema is this process of disindividuation. And one could say that this is the drama of cinema, and the drama portrayed and confronted by every great director. This is also and especially the case for Federico Fellini, who, in *Intervista* (1987), inscribed this pharmacology of cinema within the perspective of its becoming television. Fellini is a particularly interesting director in terms of an examination of the relation between cinema and dream – and *Intervista* is indeed a dream, as depicted in the first scene of the film. But this dream is also a kind of nightmare – the nightmare that Berlusconi will bring to Italy and to Italian cinema, but also that of the Mussolinian origin of Italian cinema, which is a recurring theme in Fellini, as can be seen in *Amarcord* (1973).

Beginning in 1960, when he first started to see the Jungian analyst Ernst Bernhard, Fellini would sketch his dreams each morning. These dreams were transcribed in notebooks, which were later published.³²⁴

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In terms of the animated image, we are yet to leave the prehistoric age. And the true history of tele-vision *begins*, perhaps, with Skype. Television is certainly not cinema.³²⁵ But what is cinema? Is it, for example, tied to actual celluloid film? Films are analogue forms of tertiary retention. So are videotapes. But what happens to arche-cinema in the age of digital tertiary retention?

The retentional change brought about by digital tertiary retention radically changes the relation to the moving image and sound, both because it turns this into an everyday practice engaged in by everyone (for example through Skype, webcams and smartphones), and because it makes possible, for example, what Godard dreamed of during a visit to Canada in 1978:

just as a novelist [...] needs to have a library to know what is being done, to receive books by others [...], so as not to have to read only his own books; and, at the same time, a library that would also be a printing press, a print workshop [*imprimerie*], to know what it is to print [*imprimer*]; so too,

for me, a film studio, an atelier, is at the same time something like a novelist's library and a print workshop.³²⁶

We are in this way living through a transformation comparable to that which resulted from the passage from hieroglyphic writing to alphabetical writing. What does all this do to our dreams? This question is at the same time psychological, political, economic and industrial. And, in this context, YouTube now creates open studios everywhere throughout the world, where one may learn, share and create.

A dream is a moment within a noetic sensorimotor loop, and it internalizes an artefactual (that is, heteronomic) retentional organization, into which the dream tries to *introduce a coherence* – a coherence with *desires that are, however, in conflict with the social organization that is concretized around this organology*, and which is incarnated by a superegoistic structure.

Such a structure produces much stupidity: through the use of collective retentions in order to keep a rein over individual and collective traumatypes, it generates stereotypes. By constantly reinforcing these stereotypes, and by taking them to the extreme, the consumerist capitalist economy, which is initially cinematic and then becomes televisual, in the end destroys the libido, which decomposes into the drives. This proves deadly for the power of cinema to dream: aside from some highly remarkable exceptions, cinematic dreams become drive-based nightmares, that is, horror movies.

The film industry has been the capitalist stage of the libidinal economy and of the organology of dreams – which are the *workshops* or *studios* of this libidinal economy. It was in this capitalist and industrial context, in which cinema is put at the service of consumption and leads eventually to television, that Capra understood cinema *above all* as a form of dependence that 'takes over as the number one hormone [...], bosses the enzymes [and] directs the pineal gland'. This *pharmakon* is dangerous because it may take the place of something that you, your body and your brain, ordinarily knows how to do itself, which is also to say, to produce – 'as with heroin', as Capra puts it, that is, in that case, in relation to endorphins.

Since the *pharmakon* turns out to be better at producing it than you are yourself, you 'unlearn' how to produce it. This is the very fate that befalls the heroin addict. It is also what happens with writing, if we are to believe Socrates. And it is what industrial organology produces in the form of proletarianization, which Marx described as being first and foremost a loss of knowledge. In the case of the cinematic *pharmakon* that becomes the televisual *pharmakon*, which proletarianizes consumers and deprives them of the capacity to produce their

own *savoir-vivre*, of the life-knowledge through which they have the capacity to know how to live, it is the primary and secondary identification processes, which constitute the condition of formation of the psychic apparatus, and therefore the condition of production of libidinal energy, that are effectively short-circuited.

That cinema is an industry has meant that its model and its means of production have been based on an *opposition* between ‘production’ and ‘consumption’: this opposition, according to Adorno and Horkheimer, expresses itself as a teratological exteriorization of the transcendental imagination. But what they fail to see is that the problem is not *exteriorization*, which has always already begun, but rather the *short-circuit* that inevitably results from the hegemony of de-symbolizing, disindividuating and imagination-destroying cultural consumerism, because it reinforces stereotypes and represses traumatypes.

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Digital tertiary retention establishes a new industrial organology that poses all these problems in new terms that make possible new dreams – and, on this precise point, we must also relate this to the projections made possible, in France, by the Super 8 camera (as Alain Resnais, for example, shows in *Muriel*, 1963) and, in the 1950s, the 16 millimetre camera.

With regard to what was said by Jean-Luc Godard in his *Histoire(s) du cinéma* (1988–98), a project anticipated in his *Introduction à une véritable histoire du cinéma*, in which he dreamt of a film library as has today become available online – well not quite yet, but it soon will be and in the true sense, for soon we will be able to browse films, and access them in conditions made possible by their digital grammaticalization, as foreshadowed by *Lignes de temps* – in regard to *Godard’s dream*, we must understand that his films are immediately and *completely underpinned by this dream and its organology*. And this suggests that we may have much to expect from digital organology, insofar as we know how to desire, to dream and to concretize this positive pharmacology.

In the late 1950s, when Godard and the critics of *Cahiers du cinéma* were dreaming, when cinema was the dream, and because their dreams were *organologically constituted by the cinema*, these *lovers* of cinema – Godard, Truffaut, Resnais and so on – became the New Wave of cinema through their *political and economic* thought of an emerging organology, just as Fellini had such a thought in relation to cinema in general: Fellini’s cinema, like the appearance of the New Wave, derived not from an organological causality but from an

organological conditionality, that is, a *pharmacological* conditionality, so that, for example, in the context of Berlusconi television, Fellini rethought, in the course of a dream, the *Mussolinian pharmacology of delusion* that gave birth to Italian cinema.

In the age of *Cahiers du cinéma*, the appropriation of the 16 millimetre camera radically changed the relations of production at the core of the cinematic machine, and thus changed the cinematic imagination of filmmakers and their audiences, *who became, in a structural way, amateurs, film-lovers*: one of the very specific features of the New Wave was that its public was composed of film-lovers. Now, these filmmakers were themselves *lovers of cinema who took hold of the 16 millimetre camera in order to show what they had seen in 35 millimetre cinema*. One cannot see the films of the New Wave without being a *lover* of cinema, *just as* the directors of the New Wave were *themselves* film-lovers.

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At the beginning of *Intervista* Fellini is in the middle of a dream. The film shows a dream that builds on notes made by Fellini in his sketchbook. It is a question, here, of note-taking: of the *organological conditions of the dream as it is elaborated through the taking of notes*. What is a dream, if not a kind of montage of these notes that are ‘day residue’, to speak in psychoanalytic terms? *Intervista*, however, is a waking dream, a kind of daydream. But what is a work, an *oeuvre* in general, if not such a dream – made out of artefacts, that is, fashioned from transitional objects of all kinds?

During a dream, I transindividuate within myself in a way that runs counter to the dominant transindividuation – the dream puts into movement traumatypes that are hidden behind stereotypes, which is also exactly what happens in any good movie – yet *my potential [puissance] to dream is the condition of my potential to act*, the one like the other being conditioned by the same organological powers and impotencies. By articulating and arranging organs, the brain with the bladder, for example, as a source of internal sensations, or with the ear, as a source of external sensations (these are examples given by Freud in *The Interpretation of Dreams*), via such a symbol, which is always a tertiary retention, that is, an artificial organ, organology mobilizes phenomena occurring during the day (daily residue) that it brings back up – as Fellini did with his memories of the years from Mussolini (at the beginning of Italian cinema) to Berlusconi (in the age of Berlusconi television).

Nocturnal organology is not diurnal organology. This passage from night to day, of which the industrial dream projected in the movie

theatre blurs the difference through ‘day for night’ techniques (a technique that in French is called ‘*la nuit américaine*’), may result in *traumatypical liberation* but in the guise of stereotypes. In this way, cinema can be turned into a *political power to harm stupidity*³²⁷ by working *with* it – through these stereotypes that are the pharmacological condition of traumatypes, and, in this regard especially, *Intervista* is exemplary.

We are projectors (as Godard said), projectors capable of projecting traumatypes, of socializing, of transindividuating on the basis of our means of production, that is, on the basis of the organological powers and knowledge of which we are capable – that we are capable of putting to work. And this capacity forms the stakes of a political struggle, especially in the cinematic context emerging from the epoch of digital retention. The economy of the ‘means’ of *oneiric production* raises the question of the ownership of the means of production of the dream, the imaginary and the symbolic.

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In *Close-Up* (1990), Abbas Kiarostami tells the story of Hossein Sabzian, who finds himself in prison because he ‘*se faisait du cinéma*’, as we say in French, meaning that he gets caught up in his own lies – and, in these lies of his, in his movie, he dreams of making a movie. In other words, there are, for Sabzian, two dimensions to his cinema: the movie that he lies about [*le cinéma qu’il se faisait*], and the movie that he cannot make, the film that he does not get a chance to realize, to direct.

Kiarostami *has* made a film, and in a way he has realized Sabzian’s dream – which was to make a film. Kiarostami interprets Sabzian’s action by suggesting that Sabzian dreamed of passing *into* the screen. It seems to me, however, that, in fact, his dream was to get behind the camera. Sabzian’s dream was to make films: he therefore had the same dream as Godard, Resnais and Truffaut. *Close-Up* shows that this dream is, to a degree, shared by all the Iranians we see in the film – not just Sabzian. Furthermore, Mohsen Makhmalbaf has Iranians speaking about their dreams of making films in his own film, *Salaam Cinema* (1995), a film that was shot in the wake of *Close-Up*.

In *Close-Up*, everyone is more or less a film-lover. As for Sabzian, a poor, unemployed resident of Tehran, he manages to find the means, even though he barely has enough to eat, to buy a copy of the screenplay of *The Cyclist* (1987), a Makhmalbaf film he greatly loves. He was so in love with it that he wanted to study it further – and we see during his trial (filmed by Kiarostami) that he had been writing screenplays for a very long time, and that he accuses his father of

having taken him to the cinema, that is, of having initiated him into and encouraged a passion that would eventually lead him to prison.

An ancient thesis states that, in fact, the origin of technics is the dream, and that, as such, technics can never be defined as the causal factor, since the cause of any invention must be the idea through which it has been dreamed up – one could say the fantasy, or the protention. This is, in a way, the argument of both André Bazin and Georges Sadoul.³²⁸

Sony, a large film and audiovisual equipment manufacturer, has based its advertising on just such a representation of the genesis of technics. In reality, dreams generate technics, *which itself generates dreams*: dream and technics cannot be separated. In *Préhistoire du cinéma*, Marc Azéma begins by referring to dreams: while animals do dream, he says, nevertheless only human beings externalize their dreams.³²⁹

I agree, and I believe that this is how tertiary retention forms. This exteriorization of dreams, as the capacity to produce what, at the beginning of *Imagination et invention*, Simondon called, precisely, invention – which he defined as the fourth moment of what he referred to as the cycle of images – *presupposes* tertiary retention as the process of grammatization of arche-cinema, that is, as the concretization of this arche-cinema, but which would also be its transformation.

The transformation of desire by this arche-cinema is what makes technical and technological projection and invention possible. And it does so on the basis of earlier technics and technologies – tertiary forms of retention generate, under certain conditions, other forms of tertiary retention, when what we refer to as the technical system of the imagination or the ideas has reached its limits. We ourselves, today, are at the limits of the imagination and ideas generated by analogue tertiary retentions, and we have entered into a new system, the digital system.

I do not mean that the invention of the digital occurred because the analogue system had reached its limits: I mean that the oneiric being that we are, which is also the noetic being, is essentially constituted by the co-evolution of its dreams and its technics. In fact, Sabzian's dream was of something that could, indeed, actually happen, something that the Medvedkin groups realized with Chris Marker, inspired by Medvedkin himself, something that the militant workers of Besançon actually managed to bring about.³³⁰ These were not exactly French Sabzians but to some extent they bore a resemblance. While going on strike in the extreme conditions of 1967, they at the same time wanted to incorporate a library and a cinema into the factory. Paul Cèbe actually did this, and he did it at the initiative of

these groups,³³¹ producing something that is of the order of an organological dream.

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In 1978, eleven years after the Medvedkin groups, Godard conceives cinema in terms of the relationship between impression and expression: 'cinema [...] enables you to impress an expression and at the same time to express an impression. On television there are both'.³³² This can be linked to what Simondon said about the cycle of images.³³³ Godard, too, speaks of a cycle of images – he thinks cinema, however, in relation to desire, whose pharmacological and organological conditions he investigates through cinematic invention.

In the book from which these quotations are taken, whose exact title is *Introduction à une véritable histoire du cinéma et de la télévision*, one of the first images that Godard uses and that he projected during those conferences where some of his films were screened, set against films taken from the history of cinema, dramatizes the question of the *relation between film and video*.

If Godard emerged from the 16 mm and Super 8 revolution, which played such an important role for Resnais, if he continues to write in ways that articulate different types of analogue tertiary retention, assembling them with one another (for example, by making notebooks and collating drafts and notes such as I spoke about in relation to dreams), then by 1978, twenty years after the appearance of the Beaulieu camera and the birth of the New Wave, he is investigating video: 'People should write scripts on video rather than – seeing a shot would help you decide how or how not to shoot it'.³³⁴ Godard emphasizes that television *could* be used to see, but that at the moment it is used to *prevent* seeing. Or, in other words, it is a *pharmakon*: 'because everyone has a TV [they] have to make people forget that it can be used to see'.³³⁵

Hence Godard is already raising the question of moving from analogue film, based on silver halides, to electronic film – while stressing the pharmacological dimension of cinema in terms reminiscent of Capra: 'cinema [...] impresses in advance the great movements that are going to take place. And it is in this sense that it shows illnesses in advance'.³³⁶ The digital could and should eventually fulfil the expectations of Godard's dream of a library of cinema that would also serve as a print workshop, as well as Sabzian's dream of offering everyone the opportunity to make films – provided a politics of the organological condition and the pharmacological situation of human dreams is placed at the heart of political economy. This means that the political world must make this its motive. But this will not be possible if the

film world (amateurs and ‘professionals’) does not mobilize itself in this direction.

Karl Marx argued in *The German Ideology* that idealism is based on an inversion of cause and effect that forgets the role of the means and relations of production in the genesis of ideas, comparing this illusion to the reversal of the image in the retina. For Plato himself, the cave was a place of illusion – and he founded idealism by suggesting that it is necessary to get out of the cave in order to re-locate what Adorno himself called the light of day: it is necessary to leave the movie theatre. What Sabzian wants, and what Godard, Resnais and Kiarostami want, what all *amateurs du cinéma* want, all film-lovers, who embody this arche-cinema described by Plato but without his having any way of seeing the scope of what he was describing, is not to leave the projection room: it is to get behind the camera.³³⁷ Such are the stakes of the digital, and this constitutes a new page, still completely blank, of the history of arche-cinema.

11 The Writing Screen

Everything acts as a screen. It is firstly for this reason and as such that we live among screens – that is, this is, in a way, how *it has always been*. The totem and the transitional object, as well as the fetish, are screens – that is, *supports of projections that conceal [dissimulent]*. But *digital* screens, like those of Samsung, for example, or, again, those today being designed by Amazon and Netflix, these screens, which are simultaneously electric, electronic, optoelectronic and more and more frequently tactile, are now *what both support and occlude the question of the totality of the future, and of the future as totality, and they do so as the fulfilment of nihilism* – as well as being *what, alone, make it possible to imagine something beyond this fulfilment of nihilism*.

Having become the basic supports of what I will describe as the data economy, which deploys what Thomas Berns and Antoinette Rouvroy have analysed as algorithmic governmentality, digital screens both support and occlude the projection of a future for what I will call neganthropic being – *Neganthropos*, that is, this being that, as Heidegger said, *we ourselves are*. And *Neganthropos* is a being that, as we ourselves, as the gathering of the beings that we are, as being-together, is *caught within entropy*, in such a way that *we ourselves*, as the real projectors of all these screens and on all these screens, as Jean-Luc Godard said and showed so well,³³⁸ this neganthropic being that we ourselves are, has become a threat to itself, like the *deinotaton* referred to at the heart of *Antigone*. This is so, to the point that this neganthropic being, in this being-among-screens so characteristic of our epoch, should now become the subject of what, during a seminar dedicated to the critique of anthropology, I began to call ‘neganthropology’.

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The becoming-screen of everything occurs within a *techno-logical* context in which industries exploit the data we produce on these writing screens, and do so via the operations of ‘big data’ – a development controlled by the ‘light’ industry in general, which is also to say, of course, by an industry operating at the *speed* of light. This amounts to the constitution of what I, along with Ars Industrialis, call the *economy of light-time*, which is replacing the *economy of carbon-time*, an example of which would be the financial industry of high frequency

trading. This process of the becoming-screen of writing, this screenification of writing, materializing and emerging from all sides, therefore constitutes:

- on the one hand, a *threat*, enacted through the mediation of the *fully computational and automated system* that is set up on the basis of the traces sent and received by these screens, which are various kinds of interfaces: interfaces for the systems of social networking, for user profiling, for smart cities and so on, through which truly massive amounts of data are captured and channelled, to which the technologies of high performance computing are applied in real time (at the speed of light), enabling the treatment of so-called ‘big data’;
- but, on the other hand, the *becoming-screen of writing* also constitutes a *chance*, an opportunity to *renew commentary, to reconnect with the ‘gloss’, through a completely rethought hermeneutics*, a chance to renew and reconnect with that which, in the past, made the Republic of Letters possible, and that could therefore constitute a new critical space, by making *disputation* the *dynamic principle of its individuation*.

These screens make it possible to capture data because *they are screens not just of writing but of ‘reception’*: screens for receiving messages, entertainment, information, texts (and therefore for reading) and so on. They are interactive surfaces, and in this way they are screens not just for reading but for writing – although what is written via these writing screens is not always done so wilfully by those who possess them, who often and indeed mostly take part in acts of self-traceability *without being aware of doing so*.

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The screen and writing, *écran* and *écrit*, are what – through a taste for alliteration that can sometimes lead us too far astray, or, on the contrary, keep us rooted to the spot – were already placed into opposition quite some years ago by Paul Virilio. During that time, I had many exchanges with Virilio, and I know for certain that he wanted to dramatize what he believed to be a *fundamental opposition* between the *deferred time of writing*, of this *différance* that is writing, and the *real time* of what were then called ‘new technologies’, computing and interactivity, which were then emerging in all areas of everyday

life – the novelty of this interactive environment now having largely faded, especially after the advent of the web in April 1993.

I myself have always argued against Virilio on this score, from the moment he began to continually dramatize this opposition, an opposition I have always believed to be superficial. And I made my arguments in these areas public, through an exhibition held in 1987 at the Pompidou Centre entitled *Mémoires du futur*.

At that time, I argued that the twenty-first century would be characterized by the proliferation of writing screens, which is also to say, screens connected to networks and databases that I maintained would soon be audiovisual. I also said that reading, writing and the memories produced during these acts of reading and writing (to speak with and beyond Wolfgang Iser) would revolutionize industrial society, and, for the symposium that accompanied this exhibition, I invited researchers who were working towards this revolution.

Starting from the assumptions that lay behind this exhibition, I have since argued that the computer, with its interactive screen, could and should become a *hermeneutic device*, based on annotation and contributory categorization technologies like those currently being developed at IRI in cooperation with *pharmakon.fr* and *Ars Industrialis*.

We argue that, in order to live with *decency* and *dignity* among screens *today*, to live a good life, a *vita activa*, or *indeed* to live by *suffering* through screens what is produced by ‘algorithmic governmentality’,³³⁹ requires holding on to the promise of a *new hermeneutic epoch* borne by these screens, which operate on a network, and which have become the unavoidable interfaces of the data economy, but which, for the moment, are more agents of entropy than *elements of a hermeneutics* – that is, of what I earlier spelled, *dysorthographically*, as *neganthropy*.

There is an entropic danger contained in what we call the generalized anthropization of the world, an anthropization that gave rise to an era that we now think of as the Anthropocene. This is what we discover, for example if we thoroughly analyse the discourse of Chris Anderson with respect to what he calls the ‘data deluge’,³⁴⁰ and to the way that Google exploits this data, for what Anderson claims is that there is no longer any need for either theory or experience.³⁴¹

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When Socrates said to Phaedrus, through the intermediary of Thamus, that writing both *conserves* memory and *threatens* it, he might as well have been saying that writing creates a memory screen, a writing screen, or a *subjectile*, as Artaud said, and on which Derrida

commented,³⁴² a *hypokeimenon*, or, as we ourselves might say, twisting slightly the meaning of this Greek word, a *substant*: a *sub-stance*.

This *sub-stance* is ultimately what I call a *tertiary retention*, and, more precisely, a *grammatized and hypomnesic* tertiary retention, as arises with the *first screens*, namely, in the caves of the Upper Palaeolithic – those caves where Marc Azéma claims the history of cinema began,³⁴³ and that seem so close to the scene with which Plato opened Book VII of the *Republic*. This *sub-stance*, then, which is *irreducibly* pharmacological, and which screens firstly in this sense, this pharmaco-logical *sub-stance*, is what *any* screen constitutes, any hypomnesic support, insofar as it both manifests and dissimulates, reveals and conceals (as Heraclitus said³⁴⁴) what I would like to call the *Zeit Geist*, that is, ‘epokhal’, *geschichtlich* truth. And this truth is always *the truth of this epoch’s screens*, of the screens of this epoch of truth, of what Foucault called its *regime* of truth, which is a post-Nietzschean interpretation of the question of truth, *alētheia*, un-veiling, or, in other words, the question of meaning as trans-individuation.

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That being said, I argue that today the digital writing screen must be addressed in terms of all these dimensions, and firstly from a pharmacological perspective, in Socrates’s terms. This is obviously true of every form of hypomnesis insofar as it always forms a screen, insofar as the screen conceals at the same time that it lures us and *makes us dream* – which is *perhaps what is most essential*.

All this means that the *pharmakon* makes us think, and that today it is a question of thinking the *pharmakon* itself, insofar as it is what makes us think *as well as what prevents* thinking. It is not just that only stupidity truly makes us think, as Nietzsche said, and as Deleuze repeated, but that, for example, the *pharmakon* can prevent not only thinking but even the *cultivation* of the *possibility* of thinking, the possibility of developing this noetic potential to which Aristotle referred in his *treatise on the soul*, where this soul can pass into noetic actuality only intermittently, since ‘God alone enjoys such a privilege’³⁴⁵ – that is, the privilege of being always in actuality.

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What I would now like to show is that the epoch of interactive writing screens, an epoch that is more generally that of digital tertiary retention, for which these screens are the main mode of access, opens a *political alternative*. It calls for a *struggle against the entropy caused by these screens insofar as they are digital devices for the automation of decision-making* – not to mention the effects they have on

infantile synaptogenesis, which have been analysed by Zimmerman and Christakis,³⁴⁶ in relation to which it is necessary to read Maryanne Wolf's research into the *history and science of the reading brain*.³⁴⁷ The reading brain: that is, the brain that has *internalized* the writing screen that was, for it, the *book*, insofar as this brain *can* both read and *write*, on the subjectile of papyrus, parchment, paper or, today, with pixels, and where this internalization takes ten or twenty years to really be accomplished in depth, and to form 'deep attention', as Katherine Hayles puts it.³⁴⁸ Maryanne Wolf has shown that this brain is an *organic organ*, that is, a *biological organ*, but one that has the capacity to become *organo-logical*, that is, *techno-logical*, to *dis-organize* and *re-organize* itself completely, and where the way it does so depends on *which* screens make an *impression* upon it, and of which I would thus like to say that the brain becomes, in return, the 'expression'.

Jonathan Crary has recently published a book in which he describes the world formed by these screens as *characteristic* of what he terms 24/7 capitalism.³⁴⁹ The latter would tend, by destroying all calendarities, but also and especially *by destroying all intermittence, thereby preventing both sleeping and dreaming*, to lead to their interminable *extenuation*, and to a kind of hell – and I cannot deny that, when I take a look at the world around me, this is indeed how things sometimes seem.

What Berns and Rouvroy themselves say is that when, in this form of digital capitalism that is algorithmic governmentality, someone produces a trace, often without being aware of doing so, for example, by entering a query into a search engine or sending out a message, the interactive system they use to generate the message *anticipates their words, their phrases*, and so on, which is to say that *it outstrips and overtakes them*.

This 'outstripping and overtaking' depends on all kinds of *automatons*, which are founded on user profiling, search engines, social engineering taking advantage of the network effect, and, of course, on ultra-fast algorithms capable of capturing, triggering and channeling traces more quickly than the time it takes for them to be produced or completed. Consequently, the writing screens of 24/7 capitalism produce a completely new kind of *performativity in light-time*, which perhaps neither Lyotard nor Derrida were capable of imagining – although Derrida did touch upon these questions in 'No Apocalypse, Not Now'.³⁵⁰

I would like to demonstrate that this outstripping and overtaking is possible thanks to a *delegation* of the *analytical functions of the understanding* to *computational automatisms*, and that what is

thereby short-circuited is what Kant – and then Lyotard – referred to as ‘reason’. Having previously tried to show³⁵¹ that the *transcendental deduction of the categories* is unable to integrate the question of the schematism inasmuch as the latter is, in my view, *generated by the history of tertiary retention*, and not constituted *a priori*, I would like also to demonstrate that this problem of the *organological character of the schematism* is precisely that *it is produced historically and supplementarily – which does not mean, however, that it would be totally empirical and a posteriori – and that it is always possible for it to be a screen of reason.*

Today, in this epoch in which we don’t just live among screens but *through* them, this is what occurs via these interactive writing screens that capture our retentions and protentions by performatively outstripping and overtaking them in light-time, and through the constitution of an absolutely entropic – that is, absolutely un-reason-able – automatic understanding. It is this to which Alan Greenspan drew attention on 23 October 2008.

I will not give you a detailed exposition of the arguments of Berns and Rouvroy, or of what I admire in their exemplary work – even if I do not always go along with their conclusions right to the end. I give such an exposition in *Automatic Society, Volume 1*.³⁵² What I would prefer to do now, however, is go straight to what is essential, and to suggest that there is an alternative to the hell or the nightmare that both they and Crary describe. For this we must return to Chris Anderson.

In his article, Anderson argues that the algorithms of big data have *in fact* made science and its experimental methods obsolete. Hence he describes a state of fact. And in fact, in some cases, algorithms *are indeed more efficient* than scientists in anticipating reality. But this is so only because they have installed a *performativity of fact* that destroys all *performativity of law*, that is, all *authority of any knowledge whatsoever* – whatever its form, whether juridical, scientific, political, symbolic or of any other kind.

Rouvroy herself argues that the state of fact imposed with algorithmic governmentality requires a new way of thinking law and right. If I had time, I would like to demonstrate that this means that we must think law beyond Foucault. In any case, I myself argue that this state of law, which amounts to a regime of truth in Foucault’s sense, presupposes an approach to organology that is not only theoretical but practical, that is, which develops new organologies.³⁵³

Tim Berners-Lee, inventor of the World Wide Web and director of W3C (World Wide Web Consortium), has declared his *dream of a new age of the web*, of what he calls the ‘semantic web’:

I have a dream for the Web [in which computers] become capable of analyzing all the data on the Web – the content, links, and transactions between people and computers. A ‘Semantic Web’, which should make this possible, has yet to emerge, but when it does, the day-to-day mechanisms of trade, bureaucracy and our daily lives will be handled by machines talking to machines [...]. The ‘intelligent agents’ people have touted for ages will finally materialize.³⁵⁴

Berners-Lee inscribes this project within the broader perspective of what he calls ‘philosophical engineering’, which is similar to what is also called ‘web science’. The goal of the semantic web is to take to the extreme the automation of the treatment of information by computational models, but to do so in the service of the noetic individuals that we are.

But *as* noetic individuals we are, in the first place, *knowing* beings, and there is no form of knowledge that is reducible to the computational treatment of information (which is only an extension of the analytical faculty of understanding *without reason*). We are formed – that is, *individuated* – by our knowledge (of how to live, do and conceptualize) insofar as it is constituted by processes of collective individuation, and insofar as these processes of collective individuation are subject to public rules and form circuits of transindividuation through *bifurcations* (which in the given conceptual field lead to ‘paradigm shifts’, ‘scientific revolutions’ and ‘epistemological breaks’) that *dis-automatize* the implementation of rules of certification.³⁵⁵

The semantic web, inasmuch as it enables the *automated pre-treatment of the informational hyper-material* that digital tertiary retentions constitute, cannot *in any case* produce knowledge. Knowledge is always *bifurcating* knowledge, that is, an experience of non-knowledge capable of engendering, through a new cycle of images³⁵⁶ (which is to say, on the basis of new dreams), a new circuit in the process of transindividuation in which all knowledge consists. Knowledge is, as such, thoroughly neganthropic: all knowledge contains the possibility of being dis-automatized through the act of knowing, where this knowing *internalizes* the automatisms in which this knowledge *also* consists, but which through being automatized becomes anti-knowledge, that is, a dogma that can be dogmatic only by concealing from itself its dogmatic character, or in other words, its automatic character.³⁵⁷

What Berners-Lee describes with the project of the semantic web is on the contrary a complete exteriorization of automatisms, where the artefacts that constitute the web are utilized to deprive those

conforming to the semantic web of the possibility of dis-automatizing. This is why such an *automated semantic web* must be designed in direct connection with a *dis-automatizable hermeneutic web* (with the *aid* of the semantic automatons made possible by the semantic web). This dis-automatizable hermeneutic web will be founded on:

- a *new conception of social networks*;
- a *standardized annotation language*;
- *hermeneutic communities* emerging from the various domains of knowledge that have been established since the beginning of anthropization, and as the varying modalities of neganthropization.

Such an *organological upheaval* must be implemented by Europe – where the web was invented – and it should become the foundation of a continental development strategy. Europe should plan this strategy as a conflict of interpretations on the global scale of algorithmic governmentality, in order to *shape a dis-automatizable automatic society*, one that would be critiquable, that would take advantage of the automated semantic web, and that would be desirable – because it will generate neganthropic bifurcations.

This upheaval, founded on highly noetic invention, must be socialized – that is, must generate new circuits of transindividuation – through being implemented in public research and education.

These ideas form part of the program of the Digital Studies Network run by IRI, and they are developed in *Automatic Society, Volume 1: The Future of Work*. They will be pursued more deeply in *La Société automatique 2. L'Avenir du savoir*, and will also be presented next December in the sessions of *Entretiens du nouveau monde industriel* to be held at the Pompidou Centre on December 14 and 15, with the title, *La toile que nous voulons*, 'The Web We Want'.³⁵⁸

12 Power, Powerlessness, Thinking and Future

‘To experience politics is today, for most of us, to experience powerlessness’: this is one of the opening sentences in the ‘Manifeste pour une contre-offensive intellectuelle et politique’ published by Geoffroy de Lasagnerie and Edouard Louis in *Le Monde* on 27–28 September 2015.³⁵⁹

Having been inundated by critiques of power, in particular by Foucault but more generally by ‘French theory’, now we must think political powerlessness – which is obviously not the disappearance of all power, and which is obviously an impotence that is not just political. *To think* powerlessness is difficult because it is also and firstly to think the impotence of *thinking* itself, its inability to pass from *dunamis* (power or potential in Greek) into action (*energeia*). This also and at the same time necessarily involves thinking the relations between knowledge and power, or knowledges and powers, and so on.

The manifesto by de Lasagnerie and Louis raises necessary questions. But in my view their way of asking them lacks perspective. And it contains some sweeping statements, perhaps in the hope of striking and mobilizing minds and spirits, but, as is so often the case, what they achieve proves to be the *opposite* of the intention – and such statements therefore seem to me to be not only questionable, but dangerous. When they write, for example, that the phrase “‘right-wing intellectual’” is based on an oxymoron, or better: an impossibility’, this is totally unacceptable – and for several reasons.

In the first place, for any thinking that claims to think powerlessness (and ‘to say things other than what is already agreed’), the common noun ‘intellectual’ (‘an intellectual’, ‘intellectuals’) must not only be the subject of critique, but should be scrupulously avoided. *Intellectual* is not a noun but an adjective. The substantive is *already* mired in the impotence of political thinking and political action. The figure of ‘the intellectual’ is an unfortunate invention that unquestioningly internalizes the opposition between ‘manual workers’ and ‘intellectuals’, an opposition that clearly belongs to the ‘class discourse’ of whose existence de Lasagnerie and Louis rightly wish to remind us.

According to this insidious vocabulary, wallowed in by those who refer to themselves as ‘intellectuals’, there would be specialists of the intellect, and therefore of thinking, and then there would be

everyone else, who thus often feel they are being taken for fools – to speak plainly.

Behind all this lies proletarianization, which today affects all forms of knowledge, and firstly as a *destruction* of knowledge – of how to live, do and conceptualize. Those who define themselves as ‘intellectuals’ internalize this situation, oblivious to the fact that today *they themselves have been proletarianized*. And here we should recall that in *The Communist Manifesto* Marx and Engels defined proletarianization not in terms of poverty but by the loss of knowledge (one consequence of which is pauperization), which in the end, they say, affects ‘all layers of the population’.³⁶⁰

After its destructive effect on savoir-faire, on knowledge of how to do, proletarianization began to destroy savoir-vivre, knowledge of how to live, shared culture, when *consumer capitalism* replaced this knowledge with the behavioural prescriptions produced by marketing. Since the beginning of the twenty-first century, it is conceptual knowledge that is finding itself ruined, proletarianizing the ‘intellectuals’, who try to hang on to their existence by adopting attitudes and poses rather than by producing concepts.

I describe in a recent book³⁶¹ how Alan Greenspan, appearing before a House Committee on 23 October 2008 and asked to explain what responsibility he bore for the breakdown of that year, defended himself by arguing that economic knowledge had been transferred to machines and automatons: he thereby sketched the figure of a new kind of proletarian, upholding the Marxist analysis according to which proletarianization is indeed bound to affect ‘all layers of the population’.

It is here that the issue of powerlessness arises. And it continues when, failing to understand this, and to understand how it now affects *all of us*, whoever we may be, we internalize this fact, and all of a sudden find we are incapable of overcoming it: of identifying it and struggling against it, and of opposing to it *a new rationality*. For proletarianization is also the widespread generalization of entropic behaviour, that is, behaviour that leads to the destruction of life. Such is the horizon of the new question of rationality.

Let us recall that entropy came to prominence in the nineteenth century, understood as the unavoidable dissipation of energy – whereas in the twentieth century life was defined as what opposes to this universal tendency a negative entropy, a negentropy characterized by its ability to organize entropic chaos. When we refer today to the Anthropocene, we are referring to a process leading to an immense chaotic disorganization, involving a considerable increase in the rate

of entropy, among the consequences of which are, for example, that systemic mutation we refer to as ‘climate change’.

Returning to the question of the ‘right-wing intellectual’, a phrase that according to de Lagasnerie and Louis amounts to an oxymoron, let us consider instead ‘right-wing thinking’. I believe there are countless great thinkers of the right, among them Sigmund Freud, who the ‘leftist intellectual’ Michel Onfray would consign to oblivion, himself being among those who, if I correctly understand the manifesto in question here, would be in the course of betraying the left. Among the thinkers of the right one can also find Heidegger, Luhmann, Blanchot for a time, and many others it would be too tedious to name.

Instead of producing sweeping statements that are merely a smoke-screen (through which we cast our impotence upon others), is the point not rather to know what ‘right’ and ‘left’ mean, and to understand how they relate to what this word ‘intellectual’ supposedly designates, and which it is not difficult to believe is something that requires thinking? But to *think* this, we must remember that there was thinking before the right and before the left, and there will be thinking after – Inshallah.

The current crisis of thinking derives from an immense transformation unfolding not only in the political spheres (French, European, Western and throughout the entire world), not only in economic and financial organizations (and therefore in the relations between capital and work, and between work and jobs), but indeed *in anthropogenesis as such*.

Marx and Engels showed at the beginning of *The German Ideology* (1845) that humanity consists above all in a process of exosomatization that pursues evolution no longer through somatic but through artificial organs (which was already glimpsed by Herder seventy years prior to these two early theorists of the role of technology in the formation of social relations and knowledge). But humankind has now discovered to its stupefaction that this exosomatization is now directly and deliberately produced by the market – and without offering any choice, in respect to the immense transformations to which it gives rise, other than, in the best case, the profitability of investment, or, in the worst case, the pure speculation involved in the increasingly tight connection between the casino economy, marketing and R&D conceived according to inherently short-term, and therefore speculative, models of disruption.

Technology is disruptive because the pace of its evolution and its transfer to society (so-called ‘innovation’) has become extremely rapid, causing what Bertrand Gille called the social systems (law, education, political organization, forms of knowledge and so on) to

always arrive too late. Now, it might be objected that, as Hegel said, the owl of Minerva flies only at dusk – and hence that philosophy has since long ago *always* arrived too late. Certainly. But I believe that today, in this disruption, this *lateness* is *unsustainable* and *irrational*, and that it must be *in advance overthrown*, not by rejecting technology, that is, exosomatization, which could only be purely illusory, but by elaborating a new politics (evoked in July 2014 by Evgeny Morozov in a remarkable article in the *Guardian*³⁶²).

Geoffroy de Lagasnerie and Edouard Louis deplore the absence of intellectual debate. For my part I deplore that, like Manuel Valls, they have apparently never heard either of *Pharmacologie du Front National* or of *States of Shock* – in which I argue that so-called ‘post-structuralism’ has significantly contributed, in France and elsewhere, to the legitimization first of neoliberal discourse and then libertarian discourse, the libertarians being those who are the practitioners of disruption.

This is occurring not only because ‘intellectuals’ yield to the drive-based ideology of the extreme right as it continues to gain ground. It is because there is no thought of the present age worthy of the name – and here, where I am resolutely ‘on the left’, I would *never* say that such a thought ‘worthy of the name’ would *necessarily* be on the left.

The ‘intellectuals’, whether of the ‘left’ or the ‘right’, are stuck in an antiquated opposition between ‘intellectual’ and ‘manual’ that refers in a more profound way to the opposition between *logos* and *tekhne* against which Marx fought, and which he posited as the basis of the ideology that was then called ‘bourgeois’. This has largely been forgotten, in particular by the heirs of Althusser and firstly by Alain Badiou. For the consequence lies in the fact that, contrary to what Badiou’s hero, Plato, wants to prove, knowledge is *always* constituted by technics, *which in so doing always constitutes a social relation*.

It is by starting out again from these questions that the relationship between right and left must be rethought. This is profoundly tied to industrial history. If the distinction between ‘left’ and ‘right’ occurs during the French Revolution, this is because the latter was the effect of a transformation of society by the bourgeoisie, and where the divide that organizes social dynamics and historical blockages ceases to be the opposition between ‘nobles’ and ‘peasants’ but becomes instead that between capital and labour.

The left defends labour and the right defends capital. Freed from the constraints of the Ancien Régime, the bourgeoisie were able to constitute industrial society, which was the major achievement of the First French Empire, and in which two completely different dynamic contradictions co-existed: on the one hand, the Ancien Régime and

Revolution, which endured long after the French Revolution – as evidenced by the Restoration and the Counter-Revolution – and on the other hand, right and left, which are different categories again, describing the new division arising when the Ancien Régime was truly gone – a transitional world lasting until Napoleon III, which was described, notably, by Balzac and Flaubert.

It is in this context that the notion of ‘Progress’ arises, and consequently the notion of the ‘Enlightenment’: the discourse of the left is a conception of what is rational in an industrial society, that is, such that it can be characterized as ‘Progress’. ‘Progressive’ then means ‘left-wing’. The discourse of the right is *another* conception of what is rational in this respect, often consisting in wanting to limit ‘Progress’ – but not always. There have been, rarely, right-wing discourses that would *intensify* ‘Progress’, but that question whether the *priority* of ‘Progress’ is the *reduction of social inequalities*.

Today, the promoters of what is now called ‘innovation’ rather than ‘Progress’ are frequently ‘right-wing’. And those who criticize it, and sometimes oppose it, are often ‘left-wing’. All this has gone through many stages. As for Marx and Engels, what they admired in the bourgeoisie was its ability to concretize this ‘Progress’, and what they denounced was the social injustices to which it gave rise (all this can be found in the opening of *The Communist Manifesto* – 1848).

Rarely have these evolutions been analysed and consequences drawn – Morozov’s analysis of what he calls technological solutionism is one of the few examples. Jean-François Lyotard’s *The Postmodern Condition*,³⁶³ too, represents a moment in which these changes were analysed, but I have tried to show why this analysis is no longer sufficient,³⁶⁴ and the disastrous (for the left) ambiguities contained in this work, which also opens up a thousand fundamental questions.

The context of these questions is disruption. In this disruption, society is literally *disintegrated* by innovation, in turn driven exclusively by the market, itself in the hands of shareholders. This can lead only to what Nietzsche (rather an opponent of ‘left-wing’ thinking, if not himself ‘on the right’) called *ressentiment*. And Nietzsche distrusted those who were called not yet ‘leftist intellectuals’ but ‘democrats’ and ‘socialists’, because they seemed to him figures of *ressentiment*.

The great question of our time is that of becoming in the Anthropocene, in the course of which exosomatization, of which Marx and Engels were the first thinkers, has passed completely into the hands of the most speculative, irresponsible and self-destructive capitalism. And here the question of surrogate motherhood, which has stirred ‘social debate’ in France (thereby diverting attention from social, political, intellectual and economic poverty), would merit a

debate on some basis other than the indigent logorrhoea incited by this 'social issue'.

Surrogacy, along with genetically modified organisms and other technologies of life, constitutes a new age of exosomatization. It is as such that these issues must be addressed, and it is as disruptive technologies that the market promotes them. 'Progressive' or 'conservative' attitudes are nothing more than two ways of denying this new state of fact, which remains to be thought – that is, to be transformed into a state of law, rather than exploited in order to distract attention from the fundamental issues, of which these technologies of life are cases.

Immense unrest has seized hold of the world. The risk is that this unrest will turn into something more than just disquiet, and more even than anguish: into terror. This danger is obvious to anyone who is not too afraid to look at what is taking place, and it is fundamentally connected to the becoming of the Anthropocene: the direction in which this geological age is unfolding is increasingly seen by humankind as an inexorably fatal form of becoming.

All of us more or less think that this eventuality – the fatal becoming of the Anthropocene – is the most likely outcome. Why do we not ourselves say so? According to Hegel it is by starting from unrest that we begin to think. If we do not think *with* unrest, the latter engenders fear, then regression, then terror. Ought we not engage ourselves in thinking what everything suggests is the context and the horizon of what Lagasnerie and Louis call the experience of powerlessness, and undertake an experiment of *thought by posing* the enormous question of disruption that is the current stage of the Anthropocene?

I write here in my capacity as president of Ars Industrialis, which is engaged in debating these questions in the European context. We argue that to combat the protean regression afflicting our age, we need to look clear-sightedly at the world, in order to propose a new macro-economic organization. The latter must be based on the systemic and systematic valorization of negentropy – which requires a redefinition of the theory of value, as Marx called it in his 'Fragment on Machines' in the *Grundrisse*,³⁶⁵ a text ignored in France (except by Lyotard).

Entropy is becoming, *devenir*. Negentropy is what inscribes within it a future, *avenir*. Becoming and future have until today been confused. It is this confusion that makes us powerless, and it is what the impasse of the Anthropocene reveals. Such a perspective is also an immense building site for intellectual construction – open to all those who still have the ability to think for themselves, rather than vainly repeat received ideas. This implies in principle the need to constitute a

neganthropology by reopening the questions raised by the theories of entropy and negentropy in the second half of the twentieth century, in France and elsewhere.³⁶⁶

Part Three

Caring Beyond the Entropocene

13 What is Called Caring? Thinking Beyond the Anthropocene

In honour of Rudolf Boehm

A few years ago, while visiting or, rather, rummaging about Notre-Dame, the author of this book found, in an obscure nook of one of the towers, the following word, engraved by hand upon the wall: –

ΑΝΑΓΚΗ

These Greek capitals, black with age, and quite deeply graven in the stone, with I know not what signs peculiar to Gothic calligraphy imprinted on their forms and upon their attitudes, as though with the purpose of revealing that it had been a hand of the Middle Ages which had inscribed them there, and especially the fatal and melancholy meaning contained in them, struck the author deeply.

He questioned himself; he sought to divine who could have been that soul in torment which had not been willing to quit this world without leaving this stigma of crime or unhappiness upon the brow of the ancient church. [...]

Thus, with the exception of the fragile memory which the author of this book here consecrates to it, there remains today nothing whatever of the mysterious word engraved within the gloomy tower of Notre-Dame – nothing of the destiny which it so sadly summed up. The man who wrote that word upon the wall disappeared from the midst of the generations of man many centuries ago; the word, in its turn, has been effaced from the wall of the church; the church will, perhaps, itself soon disappear from the face of the earth.

It is upon this word that this book is founded.

*Victor Hugo*³⁶⁷

Introduction: On Ill-Being

I Being and evil in the ordeal of the extremely bad mood called 'post-truth'

In the new edition of the first three volumes of *Technics and Time*,³⁶⁸ reissued by Fayard, an afterword will be included with the title 'The New Conflict of the Faculties and Functions',³⁶⁹ It joins the

concepts put forward in *Cinematic Time*, which was published just prior to 11 September 2001, with those developed after this immense catastrophe, and up until 2016. The function of the present work is to complete this supplement, while at the same time inscribing it into the course of events that led to the election of Donald Trump on 8 November 2016.

This text³⁷⁰ is therefore an attempt both:

- 1 to specify the exceptional situation occurring with this election;
- 2 and to situate and project the first three volumes of *Technics and Time*, and to prepare the writing of the next volume, in the context of the Anthropocene – here characterized as an Entropocene.

We will see that in the absence of epoch provoked by disruption as noetic desertification – which accomplishes nihilism, where this has been called ‘post-truth’, an expression that has been designated the 2016 *Oxford Dictionaries* ‘word of the year’³⁷¹ – *a systemic and functional link arises between truth and entropy*.

The ordeal of post-truth in the Entropocene is eschatological in the sense that ἔσχατον refers in Greek to the limit, where eschatology is a discourse on the *extreme* limit. That pseudo-religious resurgences proliferate in the twenty-first century is not merely an avatar of the industry of fantasies and frustrations that drive-based capitalism, having become psychotic,³⁷² cultivates, just as a mad scientist may, beyond any φρόνησις (*phronēsis*), culture a deadly virus – note here that it is *not by chance* that marketing has become ‘viral’, or that Peter Thiel was trained in the Girardian philosophy of ‘mimetic desire’.³⁷³

Post-truth is not just a deviation from the scientific understanding of truth, or from the formation of public opinion. Post-truth presents itself first as a *mood* [*humeur*]. And, more precisely, as an *extremely bad mood*. To understand this, and therefore to characterize the Entropocene era, we must return to the question of ill-being that was posed in the subtitle of *La technique et le temps 3. Le temps du cinéma et la question du mal-être*.

To refer to a *time of cinema*, and to approach it as a question of *ill-being*, was to assert – on the eve of 9/11 – that the ‘question of being’, and the ‘history of being’, and, through that, *the history of truth*, must all be reconsidered from the perspective of cinema inasmuch as, as an industry commencing from a screening in 1895 at the Boulevard des Capucines in Paris, it gave rise to the question of an *arche-cinema*, which, after *Technics and Time*, 3, we have tried to show³⁷⁴ takes shape

during the Upper Palaeolithic with the appearance of the first *hypomnesic* tertiary retentions.

That one could describe 9/11 as the biggest blockbuster [*super-production*] in showbiz history³⁷⁵ [*histoire du spectacle*] is a notion we should consider quite seriously. But we can understand what is at stake in doing so only if, whatever hypothesis we envisage, we relate it to the global dimension of what seems to be developing via the proliferation of screens within a biospherical cave *with no outside* – in Peter Szendy's³⁷⁶ sense, when, passing through Carl Schmitt, and in order to approach Kant and the cosmopolitical question he raises, he philosophicalizes *the end of the political age* [*fin des temps politiques*] as we have known it until now: as that of a city delimited by a free outside, as Schmitt says, and inasmuch as it has enabled the formation of a cosmopolitical discourse anticipating the possibility of a society of nations.³⁷⁷

That tele-vision, *realizing* a massacre in real time for an audience numbering in the billions, has the capacity to generate the feeling of a kind of coming apocalypse (firstly for the murderers who ensured the 'superproduction' of the event), finds its default of origin in the Upper Palaeolithic: cave decoration prefigures cinematographic hallucination through a primordial, discretized noetic projection.

'The New Conflict of the Faculties and Functions' tries to show that, in these *adorned* caves, a process of the exosomatization of noetic functions was initiated, including, in particular, the function of imagination, insofar as primary and secondary retentions and protentions are henceforth arranged via tertiary retentions. The latter, from the teddy bear to the fetish object, constitute screens for all manner of projections, right up to their most recent habitable extremities: the Twin Towers, setting for the *horrendous* [*épouvantable*] in the great tragedy that will open the twenty-first century.

In what follows we will return briefly to this Palaeolithic default of origin of arche-cinema, which will be developed in more detail in *Symboles et diabolos*, in order to confront the birth of the history of metaphysical truth, that is, via the interpretation of the cave allegory to which Heidegger would constantly return (notably in 1925, 1931 and 1940). It will then be a question – and we will pursue this with Peter Szendy and Carl Schmitt – of knowing if we must leave the cave, and if so, how, and if not, what to do.

II Retentions, protentions and exosomatization: from vital *différance* to noetic *différance*

To approach this age of cinema [*temps du cinéma*] and the question of arche-cinema that it contains as the question of *ill-being*, or as what remains *unquestioned* in this *ill-being*,³⁷⁸ which would also be what remains *unthought, untreated and uncared-for* [*impansé*],³⁷⁹ is to understand, from the perspective of this arche-cinema, the advent of the *industrial* ‘time of cinema’ as a *bifurcation*. At the origin of noesis, and as *default* of origin, there lies just such a bifurcation – which, as we will see below, is accomplished in two stages: on the one hand, the time of primordial exosomatization, which constitutes the archaic basis of tertiary retention, and, on the other hand, noetic exosomatization, which arranges the noetic functions such as philosophy tries to think them and, in so doing, to think *itself*.

Tertiary retentions in general, and hypomnesic tertiary retentions in particular, as they arise in the course of exosomatization, condition the arrangements of primary and secondary retentions and protentions. Starting from the bifurcation in which the advent of industrial cinema in the late nineteenth century consists, retentions and protentions³⁸⁰ are knotted together [*se nouent*] and play out [*se jouent*] *completely otherwise* than during the ‘history of being’.

The ‘history of being’, in other words, is trans-formed by the evolution of hypomnesic tertiary retention. During the course of its transformations, it trans-forms truth, such that, as *a-lētheia*, it arranges retentions and protentions via circuits of the transindividuation of truth [*circuits de transindividuation véritatifs*] that amount to protentional selections whose criteria are retentions.

Retentions and protentions are arranged by attention – and noesis is what constitutes *rational attentional forms*³⁸¹ in the sense that the latter, which are cumulative, and which constitute syntheses, that is, judgments, are founded on analyses themselves exposed to critique, that is, to the discernment (κρίνω) whose necessity is imposed during crises. ‘Rational’, here, does not mean logical, referring to apodictic truth as canon and so on (the logical and the apodictic constituting a specific configuration of the exosomatization of noetic functions and faculties), but everything that assumes the function of reason as the capacity to effect a noetic bifurcation after a doubly epokhal redoubling.

The ‘history of being’ is a succession of such crises (κρίσεις) generated by the tensions provoked by the succession of doubly epokhal redoublings in which the process of exosomatization and its

acceleration consist – up until the *limit* that the Anthropocene constitutes as it becomes, as limit, that is, as ἔσχατον, the Entropocene.

The age of post-truth is eschatological in that, as a confrontation within the ordeal of hegemonic calculation in which thoroughly computational capitalism consists, and, consequently, as the test of its *extreme* limits as the Entropocene, post-truth, which is this test and this ordeal (this suffering), puts an end to this ‘history of being’ as the series of the epochs of the forgetting of being, which will have been the epochs of the *denial* of tertiary retention, that is, of *tekhne*, and of *tekhne* inasmuch as it opens up the ordeal of δίκη (*dikē*) and ἀδικία (*adikia*), and vice versa – *tekhne* and *dikē* thus forming a transductive relation, as will be reaffirmed in the final chapter of the present work.

Noetic *différance* crosses the process of the exosomatization of life, and, as it does so, it *bifurcates* (in two stages³⁸²) in relation to vital *différance*, thereby establishing, on the basis of vital individuation (which is endosomatic), a new regime of individuation – psychic and collective individuation in their inseparability from technical individuation. In the course of the evolution of noetic *différance*, therefore, collective retentions and protentions form and accumulate during an evolution that is no longer simply that of life, but of the exosomatic itself.

III Exorganisms and their transformations – from protohistory to the ‘end of history’, that is, to the Entropocene

Through the *combinations* configured by this exosomatic *différance*, exorganisms are formed. Exorganisms are those complex and protean exosomatic beings that tend to territorialize themselves starting from the Neolithic. During the seventeenth century, Hobbes and Spinoza tried to conceive them as social cohesions [*faire-corps*] occurring beyond the psychic soma. But they did not consider them in terms of exosomatization, which enters the scene as such only with Marx – even if Bacon was clearly already pointing in that direction.

Through *territorialization*, territories themselves become exorganisms on which retentional *accumulations* occur, while hypomnesic retentions also induce cumulative circulations that traverse territorial exorganisms, giving rise to new dynamics – in particular those that liberate *technical tendencies*³⁸³ (and *technical lineages*³⁸⁴), which *emancipate themselves from ethnic milieus* and concretize themselves as *technical facts*. Technical facts are such concretions: *always partial* (even negative) *concretions* of tendencies that constitute *territorial exorganic functions*. Today, the latter tend to become *totally deterritorialized* as they become *functions of the biosphere* on a *planetary* scale.

Through territorial retentional and protentional accumulation – through which what *Technics and Time, 3* describes as retentional systems form, and such that they may also result in *sedimentation*,³⁸⁵ that is, an institutional sclerosis within the transindividuation produced by this territorial accumulation – collective retentions and protentions constitute what becomes, at once:

- a constantly *regenerated potential* for psychic and collective individuations;
- an *obstacle to new* retentions and protentions, to their selection and to their inscription onto new circuits of transindividuation differentially arranging the ‘flows’ and ‘stases’ that characterize exosomatic evolution, such that it shapes the dynamic tension of the doubly epokhal redoubling³⁸⁶;
- a sedimentation of traces of all kinds – from the anthropized landscape to the ruin, passing through the museum, the monument, pollution, the social network, nuclear waste and so on;
- the formation of deterritorialized exorganisms, which, between the nineteenth and twenty-first centuries, tend to emancipate themselves completely from territorial exorganisms.

Retentional and protentional accumulation and sedimentation thereby constitutes *both a memory and a forgetting* – this is already at stake in *On the Genealogy of Morality* and its *mnemotechnics*.³⁸⁷ But what Nietzsche *still did not see clearly*³⁸⁸ is that this ‘both’ is what characterizes the *pharmakon*.

The accumulation of waste becomes perceptible as such (as the intrinsic character of an irreducibly pharmacological exosomatization) only when the threshold has been crossed that means the entire biosphere has been *saturated* by anthropization, where there is no longer a square metre of virgin territory left to be found, where a stage of toxicity has been reached that is comparable to Freud’s description of the fate of protists that destroy themselves due to their inability to eliminate the toxins they produce:

An infusorian, therefore, if it is left to itself, dies a natural death owing to its incomplete voidance of the products of its own metabolism. (It may be that the same incapacity is the ultimate cause of the death of all higher animals as well.)³⁸⁹

In the course of the history of truth, and as the *onto-theological* history of the denial of the *pharmakon* (of its irreducible toxicity regardless of any remediation), a denial that usually comes at the expense of a *pharmakos*, the accumulation of collective retentions and protentions thereby forms epochs. These retentional and protentional epochs, which always end by themselves becoming toxic, are characterized by forms of knowledge that always end up turning into non-knowledge. This knowledge and non-knowledge is tied to retentions and protentions via circuits of transindividuation. These connections are metastabilized by synchronic configurations, which, in their mutually allagmatic³⁹⁰ relations, form *epistēmai*.

Synchronic and diachronic relations constitute *macrocosmic and microcosmic scales* that configure and metastabilize – via *instruments of macroscopic and microscopic observation, control, regulation, obligation and so on* – the circuits of transindividuation forming a local dynamic and exosomatic system, that is, a local *exorganism*. Circuits of transindividuation themselves metastabilize transductive relations of scale, within which allagmatic relations take shape. These allagmatic relations are operational schemes that open up opportunities for trans-formative operations.

Because they are also sedimentations, the accumulations that these *epistēmai* constitute through the metastabilized circuits of their transindividuation also contain non-knowledge. This non-knowledge consists of arrangements of retentions and protentions forming stereotypes (that is, indurations and stases) and traumatypes (that is, troubles and disturbances). This is why we must understand this non-knowledge in two senses:

- There is the non-knowledge that lies *beyond* knowledge, that is, as its *future*, which has a ‘consistence’ that exceeds all knowledge because it is the knowledge of what does not exist, of what has never existed, of what will never exist, being a promise of knowledge remaining always yet to come, and belonging *through projections* to what Aristotle called the *timiotata* – to what is most precious, to that which is priceless³⁹¹ – which traumatypically affects noetic individuals (troubling, disturbing, moving them in the sense of e-moting them, hence putting them metabolically into movement).
- There is non-knowledge inasmuch as, through the process of exteriorization in which the retentional and protentional accumulation of knowledge consists, this exteriorization bars access to forms of knowledge insofar as the latter are

in fact *savourous* only as living, reanimating and regenerating what, in accumulated knowledge, has become dead, stereotypical, automatized, so that the exteriorization of knowledge (and, in that, its automatization) in all its forms is its condition of possibility, but where this is thus also its mortification, its condition of impossibility³⁹²: its *irreducibly tragic* tenor.

IV The *epistēmē* of capital as totalization and extreme ill-being in the face of ‘absolute danger’ and ‘monstrosity’

Non-knowledge, understood in this second sense, is what the *epistēmē* of capital has generalized, an *epistēmē* that arose with mechanical tertiary retention at the end of the eighteenth century.³⁹³ This generalization of non-knowledge has led to the current situation of *extreme ill-being* that characterizes the Entropocene in its most recent phase and insofar as it is disruptive as such, as we shall understand better through a reading of Alfred Lotka.³⁹⁴

It is this non-knowledge that has led to thoroughly computational capitalism³⁹⁵ – which amounts, as I will try to show in what follows, to automated totalization, and to a planetary totalitarianism and a global market that are both ‘smart’ and ‘soft’. As such, capitalism constitutes a negative *epistēmē*, and an absence of epoch in that it is an epoch of *absolute non-knowledge*. This ‘absolute’ confirms the Hegelian analysis of the phenomenology of spirit, but inverts it, and, ultimately, *overturns it* as an *eschatology of extreme limits* sometimes referred to as the ‘end of History’ – where there arises an *absolute emergency* [*urgence absolue*].

This *overturning inversion* [*inversion renversante*] is not that undertaken by Engels and Marx: it also to a large extent overturns *their* analyses, in particular with respect to the proletariat as bearing a negative potential. This is why, without questioning and problematizing in new ways the dynamic elements that remain to be developed in the Marxist thought of capital – in particular in the *Grundrisse* – as well as the limits of these analyses, and sometimes their regressions in the Marxist corpus itself, it will be completely impossible to struggle against the ideological underpinnings that have led to the Trumocene,³⁹⁶ and, notably, the arguments of Francis Fukuyama and Samuel Huntington, but also, more recently, the less well-known theses of Peter Thiel.

With the advent of industrial cinema, Hollywood reconfigured the ‘American way of life’ as a function of consumption, just as Taylorism

reconfigured the function of production. Subsequently, in the ‘post-truth’ world of algorithmic governmentality, the question of evil resurfaces, and it does so macrocosmologically – and not morally – after the Nietzschean attempt to leap (*Sprung*) beyond good and evil, and as the threat from within the biosphere to the biosphere itself. We will see in the next chapter how Lotka, as a thinker of exosomatization, anticipated this threat.

The question of evil returns in what presents itself more than ever as a cave with multiple planetary dimensions, but with no way out³⁹⁷ – filled with simulacra, a word we should understand in the sense of Nietzsche, Deleuze, Baudrillard, Simondon, as well as Winnicott, and, beyond all of these authors, from the perspective of exosomatization. This immense cave incubates a macrocosmic and microcosmic ill-being that is also a dangerous psychosocial malaise, which, after the questions raised in *Technics and Time, 3*, has turned into the reign of stupidity and a world going mad – as it sinks into the filth [*immondices*] of post-truth, a filth whose variations are as diverse as the types and functions of excretions in endosomatic life.

To take up such questions, to *assume* them, such that they put the ‘question of the question’ itself into question, as Jacques Derrida reopened it in *Of Spirit: Heidegger and the Question*,³⁹⁸ is also to reinterpret, in a new way, Book VII of the *Republic* and its allegory. ‘In a new way’ here means: beyond Martin Heidegger, but passing through him.

This pathway explains why Stephen Barker’s translation of *La technique et le temps 3. Le temps du cinéma et la question du mal-être* as *Technics and Time, 3: Cinematic Time and the Question of Malaise* is both justified and problematic. *Mal-être*, ill-being, is certainly a malaise, and a psychosocial malaise, as we have just affirmed – it is a humour, a mood, a *Stimmung*: a disposition, an ‘affective tonality’. But this malaise, which is not simply psychic, is an ill-being in the sense that it stems from a *cosmic* disorder affecting – and as its illness [*mal*] – the *being* of Dasein, and, beyond Dasein, ‘being without beings’.³⁹⁹

This ill-being is not just a malaise because it is not *only* a mood: it is also and *above all* what, as the *macrocosmic disorder* of the biosphere, *provokes*⁴⁰⁰ a dis-integration of configurations that, in the course of the history of truth, and in a fundamental relationship to science, *being and evil* will constantly impose in the *denial of tertiary retention* and its primacy – and where this denial *characterizes* the history of the West that Heidegger called the history of being, and that Nietzsche called nihilism.

The *provocation* (*Herausfordern*⁴⁰¹) involved in this reconsideration of the history of truth, and as its objective deconstruction, is what, at the end of the exergue of *Of Grammatology*, Derrida opens up under the names of *absolute danger* and *monstrosity*:

The future can be anticipated only in the form of an absolute danger. It is that which breaks absolutely with constituted normality and can thus announce itself, *present* itself, only as a kind of monstrosity.⁴⁰²

This provocation of danger, insofar as it *presents* itself as monstrous – presenting itself *firstly*, after the Second World War, before the École and its clerics, and *then*, at the beginning of the twenty-first century, to the eyes of *everyone*, in various ways, from the École to those who voted for Trump or for Le Pen – is therefore that within which Derrida’s deconstructive approach presents itself and *imposes* itself. And it is that which deconstructs the deconstructive approach of Heidegger, where the latter comes to an end with a consideration of danger as the source of what alone can ‘also save’.

To what extent will Derrida himself have *taken the measure and exceeded* [*mesuré et démesuré*] what is at stake here? And what about the ‘Derridians’?

V Negative teleology of total proletarianization: grammatization and pharmacology

‘Absolute danger’ and ‘monstrosity’ are *what arise* [*apparaît*] *in and as the Entropocene*, that is, as the *negative phenomenology of a negative teleology*. Hence the *ordeal presents itself: the ordeal of what challenges us and creates questions as a pharmacology* and through the *symptomatology*⁴⁰³ *of a denial* – of which the election of Donald Trump, as advent of the Trumpecene, is a *caricature*, as *reign* of ‘post-truth’.

This *inapparition* – which Derrida, in dialogue with Jean-Luc Marion, did not himself relate [*rapportée*] to negative theology, even if he did, if I may put it like this, *deport* [*deportée*] from it⁴⁰⁴ – un-does and de-feats [*de-faits*], in the great sorrow of its eschatology and in the form of ‘post-truth’, the questions that accumulated during the course of metaphysics as collective retentions and collective protentions. Hence arises, at ‘the end of philosophy’, the *misunderstanding* that ‘there-being has of its being’.

The Entropocene un-does and de-feats the questions of metaphysics: it unravels them by de-constructing them through what Derrida himself describes as an objective deconstruction. At the risk of

seeming to be the legitimation of this state of fact,⁴⁰⁵ Derridian deconstruction merely *gathers up* this *defabrication* of preceding noetic circuits by the *disruptive fabrications* of a capitalism that, in the ordeal of ill-being that is its result, and which is the eschatological ordeal of nihilism, fulfils [*accompli*] the latter as de-noetization, that is, as *total proletarianization*.

Derrida will introduce the question of the *pharmakon* one year after publishing *Of Grammatology* – the *pharmakon* was yet to appear in the earlier work. The *pharmakon* is what, as tertiary retention, *puts in question* the possibility of questioning itself: it forms an obstacle to anamnesis, that is, to what *fulfils* [*accomplit*] the question. The possibility of questioning is, in *Being and Time*, what defines the being that we ourselves are, Dasein, and it is this possibility that, in the existential analytic that is *Being and Time*, makes Dasein the privileged being whose existential structures are to be analysed in order to clarify *being itself as time*, and in what Heidegger calls the historicity (*Geschichtlichkeit*) of the ontological difference of being and beings.

But Dasein can question only because it is itself put into question. And what puts it into question is the *pharmakon*. The *pharmakon*, as a technical (exosomatic) upheaval, is what puts into question the one who questions, which is to say the very possibility of questioning. Dasein, the privileged being, questions only inasmuch as it is put into question by that which precedes it and at the same time exceeds it beyond all questions,⁴⁰⁶ thereby forming what Bergson called an obligation.⁴⁰⁷

This putting into question of the being who questions by the *pharmakon* hence puts the question itself into question. The question is what leads – as its fulfilment – to what Socrates calls anamnesis. But anamnesis, which is *provoked* and in a way *invoked* by the exosomatic hypomnesis that is the *pharmakon*, which is as such curative, is also what this hypomnesis can impede. This is why the putting into question of the question itself, which will be the key issue in *Of Spirit: Heidegger and the Question*, is already in play in ‘Plato’s Pharmacy’, and as *that which grants play*, which is also to say that which gives the *rule* of the game: what Derrida shows is that hypomnesis is the condition of anamnesis, itself constituting the question *as such*.

Such a rule is the an-archic rule of an absence of rule: the rule of the default as the default of the rule that is necessary [*la règle du défaut comme défaut de règle qu’il faut*].

But this means that the *pharmakon* is always that in relation to which a *bifurcation* can and must operate, such that it is offered by the *pharmakon*, against the *pharmakon*, and as its quasi-causality, beyond any *Aufhebung*, any dialectical synthesis, whether ‘idealist’

or ‘materialist’: pharmacological quasi-causality always ends by itself generating new *pharmaka*, which revive the tragic situation in which *exosomatization consists inasmuch as it opens promises that it can keep only by différenciating the horizon anew*.⁴⁰⁸

Such a quasi-causal bifurcation in exosomatization, which *engenders a promise by reviving all the promises already broken*, is what can and what must be described today on the basis of questions stemming from theories of entropy and anti-entropy⁴⁰⁹ reconsidered from the perspective of exosomatization – something that Derrida never took into account in his publications, except in *The Post Card*, which referred to the ‘energetic “model”’⁴¹⁰ of Carnot-Clausius only to *exclude* this perspective evoked by Breuer and Freud.⁴¹¹

Reconsidered and deconstructed on the basis of a deconstruction of the Heideggerian and Derridian deconstructions, these theories, which were ignored by Heidegger as they were by Derrida, and the promises they make it possible to revive and reactivate on the basis of this reconsideration, constitute what we claim here to be a *neganthropological enterprise in the Entropocene*, where this is what tries to care-fully think [*panser*] the Entropocene.⁴¹²

By starting from the aperiodic crystals that form the genetic envelopes of the species, Erwin Schrödinger showed in 1944 that endosomatic organogenesis as vital *différance* is what enables the dissipation of energy to be locally and temporarily deferred, and that it is through this process that the organogenetic differentiation we refer to as evolution is engendered, whereas the *dissipation* of energy constitutes the thermodynamic law of inorganic realities. ‘The New Conflict of the Faculties and Functions’ attempts to show that we must integrate Schrödinger’s analysis with that of Lotka in 1945,⁴¹³ when he showed that the human species is exosomatic,⁴¹⁴ and hence that it requires an *economy* and a *différance of entropy* that Nicholas Georgescu-Roegen would later describe as the continuation or replacement of biology.⁴¹⁵

Such a passage from biology to economy requires, however, taking a step beyond what, with Schrödinger, would allow life to be described as the *local and temporary* production of negative entropy – more correctly called anti-entropy⁴¹⁶ – through an *endosomatic organogenesis* that shapes the organic limits of species and the individuals of which they are composed.⁴¹⁷ *Exosomatic organogenesis* fundamentally displaces these limits by projecting them *beyond the living*, and it *pursues evolution by constantly displacing them*. This is what Freud, in *Civilization and Its Discontents*, called the ‘perfecting’ of organs.⁴¹⁸

VI Noesis and acceleration: informational *indifférance*

This constant displacement of limits occurs *ever more rapidly*. And the more the organs are perfected, the greater the side effects they produce – which are the price of the pharmacological character of exosomatization, and which constantly require further improvements [*perfectionnements*] – and the more *exosomatic organogenesis overtakes social organizations*, and, ultimately, *disintegrates them*. It is starting from this observation, and from the extremely destructive effects of the two world wars that would shape the twentieth century, that in 1945 Lotka put forward his theory of exosomatization.

This *disintegration*⁴¹⁹ is what, at the beginning of the twenty-first century, reaches a *limit point* with digital tertiary retention and the calculation and transmission speeds it makes possible. It is this that has been called ‘disruption.’⁴²⁰ And this is what we are trying to think here in terms of the *possibility of a new type of doubly epokhal redoubling in the absence of epoch*, which as such constitutes, and as the *ordeal* of post-truth, the *eschatology* of what Heidegger called the ‘history of being’. It constitutes *a new era of noesis*,⁴²¹ that is, a new arrangement between its functions, and as the organological reconstitution of a future of knowledge.⁴²²

To take responsibility [*prendre en charge*] for such questions, today, is to show that the concepts of entropy and anti-entropy, as they have been mobilized by information theory and cybernetics, do not allow our exosomatic and pharmacological situation to be either thought [*penser*] or taken care of [*panser*], a situation that, in the epoch of computational capitalism, becomes not only toxic but *irreversibly* destructive. This eschatology therefore constitutes the *imperative* of a *decisive* bifurcation that is all the more worrying inasmuch as its accomplishment is in a strict sense improbable and literally in-credible [*in-vraisemblable*]: it requires a *leap beyond* common sense, the latter having proven to stem from a stupidity [*bêtise*] that is the most widely shared thing in the world in the epoch of post-truth.

The microcosmic and macrocosmic symptom of this situation is the extremely bad mood. To remain unaware of this situation – which is the *common blindness* characteristic of the absence of epoch – will therefore take the question of improbability to its extreme limit, insofar as the improbable refers to any bifurcation emerging from *différance*, whether vital or noetic. This extremity is untreatable [*impansable*] in fact, but not in law. Law is even what affirms, beyond the law, and as its very promise, a justice that will never eventuate, which will therefore *never be cured* of injustice (incurable as such, if not untreatable [*impansable*]), yet which it is a matter of treating and

thoughtfully caring about [*panser*]: it is *precisely* [*justement*] a matter of care-fully thinking it [*panser*], and doing so *against all odds* [*envers et contre tout*].

To take thoughtful care [*panser*] of the absence of epoch is to treat and take care of the entropology of the Entropocene⁴²³ – such that it *must* now traverse the ordeal of post-truth, and face up to the danger that Donald Trump *incarnates* from head to toe and passing through Twitter. This is possible only by returning:

- to Heidegger's and Derrida's silence with respect to the second law of thermodynamics;
- to the limits or errors involved in the use of thermodynamic theory in information science and cybernetic theory.

The concept of information, concretized and put in play as fixed capital (ignored by Shannon, but not by Wiener), is what tends to eliminate noetic *différance* itself (which worries Wiener), as well as vital *différance*, and does so through the generalized proletarianization not just of production and consumption but of conceptualization.

As the opening of a widening gap in relation to what is now called (officially and hypothetically since August 2016) the *geo-logical* era of the Anthropocene – an era that affects the very notion of geology, and, along with it, the notion of *scales of time*, disrupted as they are by the speed of the *pharmaka* emerging from the industrial era – the notion of the Entropocene is the outcome of the work carried out after *Technics and Time*, 3, and it introduces a number of new questions, concepts, themes and problems in relation to those that the introduction to *Technics and Time*, 1 tried to specify in 1994.⁴²⁴

Henceforth, the *pharmacological situation* is what imposes itself in the biosphere as an *inescapable* test – *one that can therefore not be deferred in its 'as such'* – of the structural ambiguity of this positively and negatively dynamic situation, which is to say a situation both promising and dangerous, as was already foreshadowed in what in 1949 Heidegger called *Gestell*. But it is also what imposes itself through the *reactions* and *operations* of *denial* that it provokes – and, first and foremost, on the part of Heidegger himself, and where this is what the Derridian deconstruction of Heideggerian deconstruction pursues without itself escaping this fate – which is the issue at stake in *Monsieur Teste*.

This denial is a *primary functional trait* of capitalism, which, becoming with digital tertiary retention thoroughly computational, constitutes a 'smart' capitalism based on a permanent and planetary totalization itself constituting a 'soft' totalitarianism, industrially and

mathematically exploiting the drives and the mimetic archaisms that underlie them. This vast industry of lies, addiction and flights into compensatory fantasy prospers by exploiting the inherently destructive denialist tendencies that constitute the arche-protention of being-towards-the dead,⁴²⁵ which is not just being-towards-death but *neganthropological différance*, and as *being-for-life*.

Neganthropological différance, which is noetic *différance* insofar as it *always* exceeds *Anthropos*, defers, through its exosomatic organs, the completion of an *irreducible* entropic tendency that is also anthropic precisely in that these organs are *pharmaka*. Anthropy designates this problem of living that *Anthropos* constitutes as a species that is entropically self-destructive – what Lévi-Strauss calls entropology – and which, as such, destroys life in general.

To the anthropic tendency, we must not oppose but *impose* a neganthropological tendency, by quasi-causally inhabiting the anthropic tendency and in so doing reversing it, that is, *localizing it*, through a neganthropic bifurcation – which Lévi-Strauss never succeeded in imagining due to having failed to read Leroi-Gourhan seriously,⁴²⁶ and which Heidegger both gave to thought and care [*donnée à panser*], while himself leaving it unthought.

VII Caring for the *pharmakos*:

ill-being's chosen one is not the Antichrist

To differ from and defer the anthropic tendency, expressing an entropic tendency itself irreducible: this has the structure of a promise that is never kept but always awaited – because its condition of possibility is also its condition of impossibility, and vice versa (which means that desire only ever wants the impossible, that is, the infinite: the incalculable that is the singular insofar as it is incomparable).

Neganthropology concerns the animal who makes promises, and it is this that is concealed within the Derridian concept of *différance*. But it is not developed there – since it fails to consider life and survival after the thermodynamic question, and its *différance* from the living as anti-entropic locality. The denial of the *pre-eminence* of the thermodynamic question after Clausius is common to most of those who have tried to overcome metaphysics, that is, passive nihilism: Marx, Nietzsche, Heidegger and Derrida. Freud and Bergson (and, to a lesser extent, Lacan) are, however, exceptions, as will be argued in *La technique et le temps 6. L'idiotie*.⁴²⁷

The work on ill-being that must care-fully think [*panser*] the Entropocene resumes the work begun in *Technics and Time*, and does so at the moment when the Anthropocene becomes the Trumpocene.

Everyone knows that Trump is the *elect(ion) of ill-being*. Does this mean he represents the election of evil, if not the Chosen One of Evil – the Antichrist? In no way, except in the sense that it would be a matter of overcoming the nihilistic figure of the Antichrist. By dressing up this noun, Evil, with a capital letter [*majuscule*] – the majesty of capitals that in French empties all substantives of their substance – we make this Evil *opposed* to good, which thus becomes ‘the Good’. What characterizes the post-truth of which Trump is the incarnation at the head of the *planetary digital Leviathan*⁴²⁸ is this *miniscule* evil borne by the law of averages that is today the *de-composition* of tendencies, which, from a neganthropological perspective, must *always compose*.

The decomposition of neganthropic compositions is that in which the process of nihilism consists, of which Trump embodies the extreme limit and hence the eschatological dimension. Trump, however, is not, and even *precisely not*, Evil. He is bad, an evil, but this evil is above all the symptom of an ill-being that did not wait for him in order to impose itself. And it has been imposed, notably, by the *structural* carelessness of the Clinton family and the ‘Democrat camp’, which is also to say, in large part, ‘intellectuals’, academics, artists and all those who, while in principle protectors of noetic and neganthropic *différance*, have, in making their profession,⁴²⁹ for too long *bent themselves*, capitulated, to a lamentable state of fact: that, precisely, of this ill-being that, too often, they have given up trying to treat or take care of. Failing to consider it, they have fled from this situation or denied it by a thousand lines of flight that evince no care-ful thinking [*rien de pansant*], and that stem from a great noetic cowardice.

Trump was elected by staging a scene of scapegoats, and doing so through the systematic and systemic use – with the help of Peter Thiel, experimenting with and interpreting in his own way the Girardian hypotheses of ‘mimetic desire’⁴³⁰ and the scapegoat⁴³¹ – of those contemporary tertiary retentions that are *pharmaka*, triggering immense malaises and a terrifying ill-being, retentions that we must now think ‘as such’ in order to be able to think and care *about* them and think and care *with* them [*les panser et panser avec elles*].

Faced with this, this flight – which has nothing to do with the Deleuzo-Guattarian line of flight as the *pensée* (as quasi-causality) of a bifurcation⁴³² – consists in turning the one who designates scapegoats into another scapegoat, that is, a *living exosomatic organ onto which one discharges oneself and one’s responsibilities* by instrumentalizing him and by *sacrificing* him on one altar or another.

What it is a matter of *breaking* with, here, is thus a *vicious and infernal* circle of the designation of a *pharmakos*, opposing one *pharmakos*

by designating another. This circle works by exonerating oneself from the *duty* to care-fully think the *pharmakon*, where such a duty would be – in the Trumpocene, that is, ‘at the end’ of History and as the ‘actually effective’ (*wirklich*) end of the ‘history of being’ – the ‘task of thinking’ (all this Heideggerian jargon will be revisited in what follows).

• • •

1 Thinking care-fully in the Anthropocene in order to ‘try to live’

Halfway through the second decade of the twenty-first century, we, non-inhuman beings that we are, find ourselves trying to live within a state of emergency that is permanent, universal and unpredictable, and that seems bound to become unliveable. We all feel this urgency. But most of the time we deny it – except when we have no choice but to observe its immediate and disastrous effects upon our everyday existences, which tend thereby to find themselves reduced to subsistence, that is, to survival.

This permanent, universal and unpredictable state of emergency affects the entire biosphere, threatening every form of life. And, from the side of the *noetic* form of life – that of the non-inhuman beings that we try to remain – it affects all forms of *investment* and therefore all social constructions, leading to their disintegration and threatening to lead to the worst kinds of political regression: witness the proclamation in France of a ‘state of emergency’ allowing the government to suspend normal law and paving the way for all manner of states of exception that remain still to come.

In the next few years, this exceptional state will continue to deteriorate, because it is *now* that we are reaching the limits of that geological era known as the Anthropocene, in which *Anthropos* has become a key factor in the evolution of the biosphere – which is also the Capitalocene, and doubtless also what Martin Heidegger called ‘modern technology’ (*modernen Technik*).

In 1993, the Anthropocene crossed a threshold: via the World Wide Web, that is, with global digital networks (in 2016, half the world’s population is ‘connected’ whenever and wherever it may be), the conditions required for the installation of the *disruption* have now been met.⁴³³ The latter enables capitalism, which has now become thoroughly computational capitalism, to *systemically* short-circuit any

theoretical elaboration, any social appropriation, any collective individuation, any legal framework and any political deliberation.

In the disruption, the technology of digital tertiary retention *outstrips and overtakes* thinking, whatever forms it takes, creating *theoretical vacuums* and *legal vacuums* in every quarter. This raises the question of how it might *still be possible* to think in the Anthropocene – in particular if we agree with Hegel’s definition of thinking as being not just an isolated mental and psychic activity, solitary and atomized, but a process through which spirit is socialized – and is so in the experience of its fundamental lateness.⁴³⁴

This lateness is the experience of what I tried to think in *Technics and Time* as an originary default of origin – of which we must take care [*pansé*]. And this is what, after the most recent volume of that series, I have understood as the question not of dialectics, whether idealist or materialist, but as the *necessity* (Ανάγκη) of *quasi-causality* such as it was elaborated by Deleuze on the basis of Stoic morality and the Nietzschean conception of the will to power.

Quasi-causality, thus understood, is what takes up the default of origin so that it can become that which is necessary. The first three volumes of *Technics and Time* described the consequences of the default of origin as the periods, eras and epochs of what Derrida called the ‘history of the supplement’, based on what Leroi-Gourhan described as a process of exteriorization. Subsequently, *Automatic Society* and *Dans la disruption* introduced the questions of entropy, negentropy, the Anthropocene, the Capitalocene and the concept of exosomatization. The last of these, exosomatization, was borrowed by Nicholas Georgescu-Roegen from the works of Alfred Lotka, with the aim of *regrounding* economic theory.⁴³⁵

Under what conditions can we still think in the Anthropocene? On the condition that we think it [*penser*] in order to take care of it [*panser*].

To think [*penser*] *in order to care* [*panser*] is to ‘try to live’ – in the sense of the sublime tension of the beautiful *Cimetière marin*⁴³⁶ (repeated and interpreted in Hayao Miyazaki’s 2013 film, *The Wind Rises*) – for example, by practising biology as a vital function in exosomatization, such as Georges Canguilhem treated it [*panser*] when, at the beginning of *Knowledge of Life*, he stated, as a starting point and as a point of method, that is, a way of opening a path, that ‘knowing only in order to know is hardly more sensible than eating in order to eat, killing in order to kill’.⁴³⁷

2 Anti-anthropry

To care-fully think [*panser*] the Anthropocene is to think *beyond* the Anthropocene – towards the Neganthropocene.⁴³⁸ The Neganthropocene is the prospect that must be *opened up* from within the blocked horizon that is the Anthropocene. But this requires a neganthropology.⁴³⁹

Neganthropology defines the noetic form of life as neganthropic. Neganthropry is what results from that combination of the capacities of the living to temporarily and locally defer entropy (which Schrödinger called negative entropy) that have arisen since the fact of exosomatization. Exosomatization does not simply produce negative entropy, or anti-entropy⁴⁴⁰: it produces neganthropy, or anti-anthropry.

Such a process is a noetic *différance*, that is, a temporalization and a spatialization occurring *as exosomatization*. Exosomatization is a form of organogenesis that produces organs that are non-living yet essential to the survival of the organism, which is thus equipped with organs that are not just endosomatic, that is, organic, but exosomatic, that is, organological.

Unlike organic organs, however, the mutual relationships between organological organs are indeterminate, as are the relations they maintain with endosomatic organs, the psychosomatic organisms that they compose and the social organizations wherein they develop. Hence exosomatization engenders a pharmaco-logical situation where exosomatic supplementation *simultaneously saves and threatens* the noetic form of life that is exosomatized life – as anthropry and as neganthropy.

Noesis, here, has the vital function (in Georges Canguilhem's sense and in Alfred North Whitehead's sense) of increasing the neganthropic potential and reducing the anthropic impasses to which exosomatization always inevitably and simultaneously leads.

3 Hypercritique

To care-fully think [*panser*] the Anthropocene in the twenty-first century is to think *at the limit* of the thinkable [*pensable*] – and of the 'care-able' [*pansable*]. This thinking that cares at the limit requires us to think the limit⁴⁴¹; it requires what *Technics and Time, 3* described as a *new critique* – which is also a *hypercritique*, which, so to speak, carries the concept of the limit to its limit in a test of cosmological limits that would have been inconceivable to classical critique, and which simultaneously arises as the entropic processuality of the expanding

universe, the anthropic impasse that is the Anthropocene and the exosomatic condition of all noesis.

Hypercritique is what thinks the limits of thinking, that is, of critique itself in the conditions and *under* the condition of exosomatization such that it thereby constitutes and destitutes the *there (Da)* and as that which there is (*es gibt*), that is, as that, *es*, which gives, *gibt*.⁴⁴² Exosomatization, insofar as it ‘transcends’ noetic life by *imposing itself* upon it, is what trans-forms *surrealities* into various forms of transcendence. These surrealities, which extend throughout the history of exosomatization (as magic, divinities, the one true God and resulting forms of sacredness, including in secular law as politics and the profane sacredness of law, if we can put it like that), constitute what *La Société automatique 2* will describe as a surrealist cosmology.

It is *in this sense* that, within what Heidegger tried to think under the name of *Gestell*, which is the *empty surreality of that desert* that Nietzsche saw coming as the endpoint of ‘nihilism’, after Kant, and in the Anthropocene (such that, as the Capitalocene, it leads to the generalized proletarianization imposed by calculation, which replaces thinking as well as knowledge, that is, care), the hypercritique that cares about and cares for [*panse*] the limits of thinking, and therefore of critique itself, must be an organology as well as a pharmacology.⁴⁴³

Organology considers noetic life from the threefold perspective of psychic individuation, technical individuation and collective individuation. These three forms of individuation, the relations between which are transductive (which means that no one of them can occur without the other two), result from the process of exosomatization – that is, from the fact that some three million years ago a form of life arose that is *incomplete in its material form*, that is, *in its organogenesis*. This was the advent of a neotenic form of life, whose constant production, through the generations, of new artificial organs is the condition of its survival, in turn requiring *social organizations* to ensure the *exchanges of organs* between exosomatic organisms and to ensure the arrangements of these organological organs with the organic organs of these organisms.

According to this perspective, *words*, too, are organs, fruits of *poiēsis*, and each generation must relearn them, pending the direct or indirect coining of new ones. To coin new words, like the creation of instruments and other organological organs, is always a collective activity, and this collectivity produces circuits of transindividuation, which in turn support this collectivity.⁴⁴⁴

The organizational functions that ensure the cohesion of the social [*faire-corps au social*] – in the sense indicated by Durkheim when he refers to organic solidarity – are, as exchanges of organological

organs, the *economy*, and, as the arrangement of these organological organs with the psychosomatic bodies in which this life consists, *education*. To learn to speak, or to shoot an arrow (which is vital in an Amerindian society, where it therefore begins at an early age), or to play an instrument, or to count, and ultimately to *care for things* [*pan-ser*] *in a thousand ways*, is what exosomatization requires from the first moments of a newborn's life.

It is magic, the supernatural, religion and/or politics that govern the relationships between economy and education – at least until the disruption occurs as the final extremity of the Anthropocene inasmuch as it *breaks with* exosomatization conceived as social solidarity [*faire-corps social*]: with disruption, whose *radicalized* form is transhumanism, society disintegrates.

That the production and exchange of exosomatic organs is the condition of the form of life of the noetic beings that we are, or that we are trying to be, is the primary thesis elaborated by Marx and Engels in *The German Ideology*. They showed in that work that, through these exosomatic organs whose production is the rule of social evolution, systems of domination are created and operate, themselves supported by knowledge, and that this leads to a struggle between classes.

Furthermore, what would become Marx's great theme in *The Communist Manifesto* of 1848 was already present in the third of the *1844 Manuscripts*: that in the epoch of industrial capitalism, that is, with the emergence of an exosomatic development that would lead to the Anthropocene within what Vernadsky called the biosphere, the capturing of knowledge, holding it within the apparatus of production, would lead 'abstract labour' (as Marx and Engels referred to it) to destroy living knowledge. The Anthropocene thereby leads – and as the disruption – towards what the *Grundrisse* would in 1857 describe as full automation.⁴⁴⁵

The current period of the Anthropocene consists in just such a process of automation, which we call the disruption. The latter has, however, in terms of automation, become structurally insolvent: it destroys purchasing power and therefore market solvency.⁴⁴⁶ What this means is that macro-economic change is required on a global scale.

Living knowledge, as Marx conceived it in 1844,⁴⁴⁷ is, in its structure, open to the infinite and the improbable. As such, it is neganthropic. The annihilation of living knowledge to which we contribute with the data economy, which transforms it into calculable information through the process of digital grammatization, is the most advanced stage of fixed capital as it becomes a production force that excludes living knowledge.

Fully automated informational fixed capital, moreover, tends to close in upon itself, so that it becomes a *closed system*: in its struggle against the tendency of the rate of profit to fall, it tends in a structural way to increase the rate of entropy. Self-referential, and turning the users of the information system into its servants, that is, ‘techno-geographical’⁴⁴⁸ *functions* of the system, which thereby constitutes an associated milieu,⁴⁴⁹ the individuals dissolved into this system thereby become ‘dividuals’,⁴⁵⁰ and repetition (which Derrida also called ‘iteration’) no longer produces either *différance* in Derrida’s sense, or difference in Deleuze’s sense. Hence the desert grows.

The issue here is hypomnesic tertiary retention. And the first to conceive this issue, which is the exteriorization of knowledge and the possibility of its proletarianization, was not Marx but Socrates, for such are the stakes of the question of the *pharmakon*⁴⁵¹ – it was in *Protagoras* that the theme of the *pharmakon* first appeared. Hence the question of pharmacology constitutes the first and last issue in the history of philosophy, and does so starting from an organological situation in relation to which what, after Heidegger and Derrida, we call ‘metaphysics’ (as the object of deconstruction) would amount to the *constant denial*.⁴⁵²

Conceived in this way as a process of exosomatization, where what Whitehead called the function of reason would be to provide the *incalculable, improbable and as such neganthropic* criteria for the therapeutics required by this pharmacology – this therapeutics forming what we call forms of knowledge – the test and the ordeal of the *limits of noesis* is at present required because in *this* ‘present’, the Anthropocene itself is reaching its limits: the Anthropocene is entering its final phase, as disruption, and as a ‘shift’⁴⁵³ approaches that would complete a chaotic bifurcation (and that would also be catastrophic, in René Thom’s sense of the word).

To think care-fully [*panser*] in the Anthropocene is to *evaluate and transvaluate disruption* as the *final extremity* of nihilism – an evaluation carried out from the perspective of a *transvaluation of that transvaluation* of all values that Nietzsche affirmed as the urgent need to leap (*Sprung*) beyond the ‘last man’. And it is to do so beyond the nihilism that has led to the global spread of *ressentiment*⁴⁵⁴ in the hegemony of levelling and the calculation of averages.

In the next volumes of *Technics and Time*, as in *La Société automatique 2. L’Avenir du savoir*, it will, indeed, be a question of *transvaluing the Nietzschean transvaluation, precisely because what Nietzsche could neither know nor think was exosomatization*.

4 Vocation, provocation, falling

To care-fully think [*panser*] the Anthropocene is to think it from the perspective of a leap capable of *piercing the blocked horizon*.⁴⁵⁵ What Heidegger called Dasein, constituted by its ‘possibility of questioning’ being,⁴⁵⁶ can question *in fact* only insofar as it is itself *put* in question.⁴⁵⁷ And this putting in question (or questions), this challenge, is the fact of technics, such that, itself emerging from prior challenges, from prior instances of putting in question to which it responds as the *operation(s)*⁴⁵⁸ of Dasein put into question (the insistence on this word, *operation*, will be explained later), it always *provokes* new challenges and new questionings, and always poses new problems – in passing through the *vocations* to which it also gives rise.

Today, the being put into question and the *provocation* (*herausfordern*, ‘challenging forth’) in which this consists, confronted with problems now posed by previous responses to prior challenges, is crossing a threshold that paves the way for a bifurcation of immeasurable magnitude – in the history of what Heidegger called Dasein, as well as in the history of what Derrida called *différance* and the supplement. This bifurcation is a leap into the *im-mense*, that is, into excess: into *hubris* and violence (*Gewalt*⁴⁵⁹), opening onto what Heidegger called the *Abgrund* – the abyss [*sans fond*].

This questioning and challenging is what Heidegger, confronted in the 1940s with what had become *inconceivable* in this putting into question(s), began to call *Gestell* – as that which requires a leap towards the *Ereignis*.⁴⁶⁰ The being put into question(s), resulting from the *provocation* in which *Gestell* consists inasmuch as it might *put an end to any possibility of questioning whatsoever*,⁴⁶¹ is occurring as the completion of the Anthropocene – which is what in his time Heidegger called ‘modern technology.’

The completion of the Anthropocene thus conceived is the completion of the period of nihilism-become-capitalism: it is nihilism as computation. And it is from algorithmic and reticulated computation that disruption installs what Berns and Rouvroy call algorithmic governmentality – as the thoroughly computational capitalism that is establishing an era of *absolute non-knowledge*.

In this absolute non-knowledge, knowledge itself disintegrates into the information generated by fully automated calculation, and into fixed capital, which, along with ‘big data’, forms the hyper-synchronized associated milieu – or what I call the digital Leviathan⁴⁶² – produced via the applied mathematics of correlational algorithms. In this hyper-synchronized milieu, *the diachronic can no longer exteriorize itself other than diabolically*, that is, outside of any circuit

of transindividuation, or, in other words, outside of any synchronic metastability.

It is on the basis of this *Herausfordern*, and as a new age of what Heidegger called ‘standing reserve’ (*Bestand*), that there has arisen, today, in the disruption, a pseudo-scientific ideology calling itself ‘transhumanism’. This transhumanism is embodied in a global industrial project in the form of a strategic marketing of unprecedented virulence.⁴⁶³

This pro-vocation (as the first moment of the doubly epokhal redoubling), however, calls for a struggle against transhumanism, and this combat (*polemos*, and not only *eris*) is a *vocation* (in the sense developed in *Acting Out*⁴⁶⁴), that is, the *production of noetic circuits opening the era of a new epistēmē*. This *Herausfordern* calls for the *second* moment of the doubly epokhal redoubling that is the *Ereignis*, and as ‘vocation’: *fordern*, to demand, claim, require.

Transhumanism tries to *inscribe into exosomatization itself the structural short-circuiting of this vocation* that is the *function of reason* – and it is in this way that the Capitalocene tries to impose its hegemony *ad vitam aeternam* through the unlimited extension of computational power.

The pro-vocative putting in question(s) that is the *Gestell*, product of the noetic dreams of the *Aufklärung*, is more than ‘historial’ [*geschichtlich*]: it *puts historicity itself in question*. Hence it invites us to revisit the entire Heideggerian corpus starting from the question of *Geschick* (fate) – as well as that Nietzschean phrase: *amor fati*. This challenge to historicity also challenges noeticity, and this manifests itself today, massively, as de-noetization, but it is also the very thing of which Heidegger was the first victim.

The falling prey [déchéance] that would entangle Heidegger in the wake of the Nazi movement stems from an earlier de-noetization, described by Husserl in *The Crisis of European Sciences* – a crisis that translates into a *transgenerational withdrawal [défection] of knowledge*, arising from a *pharmacological crisis*.⁴⁶⁵ That someone who claimed to be a thinker of falling, of *verfallen* and *Verfallenheit*, would himself fall prey makes it all the more essential to undertake a meticulous reading of his thought and its history. And, in this connection, Rudolf Boehm, in ‘Pensée et technique’,⁴⁶⁶ has indeed shown how Heidegger’s inaugural, tortuous question of *tekhnē* thoroughly traverses the individuation of Heidegger’s own *Dasein*.

The historic falling prey of Heidegger to Nazism has *everything* to do with the detours he took in his attempt to think *tekhnē*. As *pharmakon*, and as the *unthought* of science, but also of philosophy and law, and therefore of politics, *tekhnē* is what provokes the *more or less*

local regressions that characterize the twentieth century – of which Nazism is the worst expression – and that all foreshadow the great *planetary* regression that at the beginning of the twenty-first century we all find ourselves forced to endure.

In 1935, after the plebiscite that brought Hitler to power, and in relation to which it is highly doubtful that Heidegger would either have voted no or abstained, Husserl wrote in *The Crisis of European Sciences* that it is possible, ‘today’, to listen to the ‘Hymn to Joy’, so characteristic of the epoch of the *Aufklärung*, ‘only with painful feelings [...]. A greater contrast with our present situation is unthinkable’.⁴⁶⁷ Hitler had on 19 August 1934 obtained 89.93 percent of the votes cast, for his proposal that, with the death of President von Hindenburg, he himself should combine the functions of president and chancellor, and so become the full Führer of the German people, according to the *will* of the people expressed by its ‘free vote’:

Firmly and deeply convinced as I am that all state power derives from the people and must be sanctioned with a free and secret vote, I ask that the decision of the government be submitted to the German people without delay with a free plebiscite.⁴⁶⁸

This would be a freedom to vote in relation to which philosophical *courage* – which is always also a political *lucidity*, and in which any philosophical truth *before all else* consists (as Foucault recalled in the months before his death) – would prove to be *absolutely deficient* in Heidegger, who never managed to care for the default *that is necessary*.

5 The courage to care-fully think the present

To think – in the sense that Heidegger claims to do, when he defines *thinking* as *care* (*Sorge*), that is, as *care-ful thinking* [*panser*], *panser* in the sense that it is a matter of taking thoughtful care of care itself [*panser le panser lui-même*], and, in so doing, of thinking thinking itself, as *What is Called Thinking?*⁴⁶⁹ invites us to do – is always to think and to care for and about the *general* form of what any age refers to as *today*. It is always to think and to care about it in and from the *singularity* of today that is or that becomes or that happens *here* [*là*], as the *Da* of *Da-sein*, as that which happens in and with *this* today, so to speak, as ‘our present situation’.

In the situation within which it presents itself, this ‘today’, if it *does*, indeed, *present* itself, now *presents itself as never before* as remaining *irreducible to any generalization* – irreducibly intransigent:

'intractable', as Roland Barthes said of what he referred to as the *punctum*,⁴⁷⁰ which, *precisely as such* (inasmuch as this irreducibility exceeds the *studium*, being extra-ordinary), is what *requires*, as an *imperative*, the 'courage of truth'.

The *courage of truth*, which was *obviously* lacking in the thinker of *verfallen* and *Verfallenheit* (falling prey, entanglement, degradation, decline, ruin, decay, collapse, enslavement), is *just as* lacking in those who repeat his discourse like asses astonishingly equipped with the capacity of the parrot, and equally so in those who refuse to read it.⁴⁷¹ In 1936, counter to this historical cowardice of thinking, Husserl gave a lecture on 'The Origin of Geometry' in which he called his own entire project into question, challenging an enterprise that he had begun at the end of the nineteenth century by confronting the crisis of mathematical foundations. In so doing, he reopened the question of the *pharmakon* that had appeared at the very origin of philosophy.

The scope of this calling into question(s), which has *still not* been explored in depth even after Derrida, continues to escape most professors of phenomenology – confirming for today's younger generations the idea that in order to understand the singularity of the present situation and to consider its being *there*, phenomenology is *presently useless and vain*. It is true that *our there isn't there* [*notre là n'est pas là*] – and that therein lies the whole problem, which is also that of the 'epoch' of the 'absence of epoch'.

Nevertheless, it is only after phenomenology, brought to its most extreme point by Husserl and 'elevated' [*relève*] by Derrida as the *logic* of the supplement, that it is possible to consider this uselessness and vanity. Heidegger, that Dasein who was Heidegger, was incapable of elucidating the situation that revealed itself to Husserl's eyes between 1934 and 1936, a crisis that would subsequently lead to a not-being-there where *today* all those fantasies return that had ensnared Heidegger (as well as some others, who are not themselves negligible), only because Heidegger and these others did not know and could not think the *pharmakon*, which also means that they could not take care [*panser*] of it – precisely *unlike* Husserl, that is, *to the différence* of Husserl's introduction, in 'The Origin of Geometry', of the question of the technical condition of *alētheia* conceived as having an essential relation to *apodeixis*,⁴⁷² and, in that noetic *différance*, creating an *exosomatic différence*.

As for today in general – insofar as, being *there*, it *constitutes the present* historically, that is, in Heidegger's terms, insofar as it *presents* being as 'destination' (*Geschichtlichkeit*) and as an *epoch* of the history of *being* – as for today in its 'generality', and inasmuch as, 'for any time', today is what *constitutes an epoch*, and presences *itself* as

such, as that which, therefore, represents itself, the temporality of this today stems from what Heidegger was aiming at when he referred to *Anwesenheit* as a way of thinking the *time* of being.⁴⁷³

Presence, Anwesenheit, in the today of Germany in the 1920s and 1930s, that today understood by the *Da-sein* of Heidegger, is always *in general and also* what *presences* – when a ‘destinal’ (*geschichtlich*) moment occurs and for *Dasein* in general insofar as it is the being who questions in general – *only* as the *overturning putting in question* of the *Gegenwart*, of the present: it is as such always *also* its absencing, that is, that which hollows out an expectation in the present, in a kind of not-being-there(-yet).

Now, nothing is more ambiguous and necessary than such an expectation – which is a protention, and, more precisely, it is the arche-protention that stems from being-towards-death (*Sein-zum-Tode*). This *Sein-zum...* is indeed oriented towards the actualization of entropy that is death, but, as *Entschlossenheit* in the *Eigentlichkeit*, that is, in ‘ownmost temporality’ or ‘originary’ or ‘authentic’ temporality, this being-towards..., or being-to..., is not only negentropic, but neganthropological.

I have begun to investigate this in *Dans la disruption*⁴⁷⁴ by positing that being-towards-death is not just *also* but in fact *firstly* – and as being-towards-the-future [*avenir*] insofar as it cannot be reduced to becoming [*devenir*] – the *arche-protention required by a being-for-life that exceeds life*. This is something that *Being and Time* does not investigate.

The arche-protention of being-for-life presents itself at the heart of this presence only as the hollow of an absence that is also an anxiety. This anguishing hollow that inhabits any *Sein-zum-Tode* is the haunting (the spectrality) that *returns* from *tertiary retention* inasmuch as it constitutes a *Weltgeschichtlichkeit*, but this is what that *Dasein* who was Heidegger did not manage either to think or to care for [*ni penser, ni panser*], or to take care of (*verbinden, versorgen*) – which is the condition of possibility and impossibility of what Derrida called ‘survival’, or ‘living on’ [*la survie*].⁴⁷⁵

6 To think the wound in the experience of *p(a)nser*

As Heidegger might have said had he been French, it is in *old* French that we can hear what it contains for thinking.⁴⁷⁶ For *penser*, to *think*, previously meant *soigner*, to *care*, to *treat*:

[The word *panser*] was first written *penser*, a spelling used until the eighteenth century, although *panser* and *pancer*

can be verified from 1453. In the seventeenth century, both forms were used to distinguish the two meanings, resulting in the separation of the two verbs. *Panser* first means ‘to care for, to feed (a horse)’, the meaning of ‘feeding’ coming from the influence of another verb *panser*, meaning ‘to nourish, to fill the belly/rumen’ (from *pansé*); the verb is always used in relation to a horse, but in the sense of ‘giving care to its grooming, brushing, combing’ (1453).⁴⁷⁷

These histories of *pansé*, which would no doubt have delighted Nietzsche, call for an *organology of pansée*, *inasmuch as it is also written as – and hence ‘thinks itself’ (so to speak) as – pensée*, and as the act of *taking care firstly by nourishing*, this question of nourishment being a question of assimilation, on which Nietzsche would both meditate and ruminate.⁴⁷⁸

In 1680, Richelet reported *panser les oiseaux*, ‘feeding the birds, caring for them’, a meaning that has fallen into disuse. The modern medical sense, ‘treating the wounds of a man’ (1314), is found in the old locution *panser la plaie*, before the direct construction as *panser une plaie, un blessé* (1472), and the absolute construction (1845–46, *panser à sec*). The word is sometimes used in a figurative sense as meaning ‘to relieve, to appease’ (early fourteenth century).⁴⁷⁹

To think would therefore be to take care, to care for, which is also to say, to act, to do, to make – (the) *différance*: it would always be to think the wound. But what wound?

The wound is *hubris*, *delinquere*, the violence (*Gewalt*) of the necessary default, which also *affects* Persephone and as her *palaïou pentheos*, her very ancient mourning, her old affliction, her ‘ancient wound’.⁴⁸⁰ This wound is a disease, an *affection*, and this *affect* can also become infected.

Hubris therefore needs those who can *dress, treat, care for and heal* this wound: *panseurs*. The word *pansieur* is ‘found in the fifteenth century in relation to those who care for a horse and after 1623 in medicine (*pansieurs de vérole*, pox dressers)’.⁴⁸¹ *To think* would always be to *exert therapeutic activity: hubris*, which as we will see Heidegger names both violence (*Gewalt*) and in-quietude (*Unheimlichkeit*, uncanniness),⁴⁸² is what, as the *excessiveness of exosomatization*, generates *pharmaka* that *require pansieurs*. This requirement, this request, this ‘demand’, this ‘call’, *requires* a vocation – *fordern*.

To deepen this path of care [*pansée*], which passes through *Taking Care of Youth and the Generations*,⁴⁸³ and which leads us to

introduce some neologisms that are particularly awkward in their spelling – *p(a)nsée* and *p(a)nser*, and here we would need to return to what Derrida wrote concerning the misspelling, the fault of orthography, that *différance* assumes⁴⁸⁴ – we must return to the first steps that were taken at the beginning of *Technics and Time* on the basis of an analysis of Leroi-Gourhan’s palaeo-anthropology: where there appears the *traceology* of the default that it is a matter of carefully thinking [*panser*] in order to do what is necessary, and as the traceology of thinking.

7 What can exosomatic *différance* do?

During the period of those Leroi-Gourhan referred to as the Archanthropians,

tools and skeletons evolved synchronously. We might say that with the Archanthropians, tools were still, to a large extent, a direct emanation of species behavior.⁴⁸⁵

This statement appears in ‘Technics and Language’,⁴⁸⁶ and it contradicts the *opposition* that Leroi-Gourhan would make in ‘Memory and Rhythms’⁴⁸⁷ between the *specificity* of animal groups (in the sense that the species is the centre) and the *ethnicity* of human groups – leaving between the terms of this opposition a kind of *theoretical vacuum* that would maintain itself between *specific différence* and *ethnic différence*.

Technics and Time, 1 put forward the concept of epiphylogenesis in order to *exceed* this opposition, and to characterize exteriorized memory – *exosomatized memory* – and its *function* on this side of and beyond just the ethnic form of technical life: as the *situation* that constitutes the unity of the technical form of life, that is, its *ēthos*, and as the evolutionary process during which what we call ‘humankind’ does not cease trans-forming itself.

This evolution and this transformation deviate from the law of the evolution of species, and from any natural selection: they occur at a remove from the ‘struggle for life’ whose result is this natural selection. And, whereas specific memory is internal to the organism, that is, endosomatic, epiphylogenetic memory is external to organisms, that is, exosomatic: it supports social organizations *while also exceeding them* – until today, *when exosomatization seizes hold of endosomatization itself* through synthetic biology, biotechnology and neurotechnology.

Exosomatic memory supports social organizations while also exceeding them, and does so as *technical tendency*: this is what

Leroi-Gourhan posits in *Milieu et techniques*,⁴⁸⁸ where he shows that within what he calls the ‘ethnic cell’, those who form the ‘technical group’ always (hubristically) exceed the ‘ethnic group’, who, however, cannot do without them insofar as they are the bearers of the technical milieu that *constitutes* the ethnic milieu, while also exceeding it. Hence the question is opened up of the infidelity of the milieu that Canguilhem raised at virtually the same moment (1943) in his medical thesis, though it was not published until 1966.⁴⁸⁹

The new concepts deriving from the pharmacological perspective on exosomatization that have emerged since the first volume of *Technics and Time* allow a refinement of what we will no longer call anthropogenesis, but neganthropogenesis. Neganthropogenesis designates the appearance of a form of life that is not just negentropic, in the sense in which this term has been used since Schrödinger, but *neganthropological*, in the sense that *organological and instrumental differentiation*, which exosomatically continues endosomatic organogenesis while at the same time breaking with it, supports epiphylogenetic memory – which no longer proceeds according to the laws that govern life as biological science has understood it since Darwin.

The concept of exosomatization, as it has been inscribed by Nicholas Georgescu-Roegen into the concept of entropy, considerably enriches Leroi-Gourhan’s concepts of ‘technical tendency’, ‘technical fact’ and ‘exteriorization process’, which were developed between 1943 and 1965 – and, reciprocally, we should read *The Entropy Law and the Economic Process* and *Energy and Economic Myths* in light of *L’Homme et la matière* and *Milieu et techniques*.

Lotka’s concept of exosomatization enabled Georgescu-Roegen to provide a *new foundation for economics* by understanding the latter as the theory and practice that must *replace biology* in order to regulate the socialization of exosomatic artefacts – in order to *organize the evolving cohesion and coming-together* [*le faire-corps évolutif*] in which this *différance* consists, but where this *différance* would no longer be simply vital, but noetic. And it is noetic in that it is technological, that is, exo-somatic, which raises, in a new way, the question of knowing ‘what a body can do’.

Logos is what, in being ex-pressed, primordially exo-somatizes itself by inscribing its *différance* outside, and by thereby constituting this outside as ‘world’, in the *there* of a being-in-the-world. Here it is no longer the organic body of biological organisms that evolves, but the organological organs and the social organizations that produce them, and that they in turn support by constituting their organological functions, which are constantly challenged and put back into

question, in return constantly challenging and putting into question these same organizations.⁴⁹⁰

8 The intelligences of exosomatization

The passage from the endosomatic to the exosomatic occurs very slowly.⁴⁹¹ It is a highly complex process, full of nuances – nuances and complexities that North American and Australian palaeo-anthropologists are freshly investigating today, unfortunately always seemingly without any awareness of the work of Leroi-Gourhan.⁴⁹² If, in ‘Technics and Language’ (the first volume of *Gesture and Speech*), Leroi-Gourhan contradicts what he will write in ‘Memory and Rhythms’ (the second volume), it is because these concepts remain approximations, something he conveys with the phrase, ‘to a large extent’ (‘We might say that with the Archanthropians, tools were still, *to a large extent*, a direct emanation of species behavior’).

The stakes of this large *extent* [*mesure*] are significant, because the latter is precisely the *commencement* of an excess [*démesure*] – restricted, limited, but just the same an excess, and of course we cannot fail to notice that such an expression, ‘limited excess’ [*démesure limitée*], is an oxymoron. *Gesture and Speech* posits that *in this excess*, and *as this excess*, on the basis of which will arise the question of the *fate* of the technical form of life (a fate that Leroi-Gourhan investigates at the end of ‘Memory and Rhythms’⁴⁹³), there emerges what would *not yet be noesis* in the strict sense, but which would nevertheless *already* be that exosomatization on the basis of which epiphylogenetic memory will be constituted.

Technics and Time, 1 showed that:

- this *necessary differentiation* between Archanthropians and *Homo sapiens sapiens* leads Leroi-Gourhan to establish an *opposition* between ‘technical intelligence’, which would be that of ‘early man’, and a ‘spiritual’ or ‘intellectual’ (that is, noetic) intelligence, which would be what occurs after these first humans;
- this is an *opposition* in the sense that *technical intelligence would not be noetic*, while conversely, *noetic intelligence would not be technical*.

This perspective, however, completely ignores the technicity of the mind or spirit itself, which is the question of tertiary retention as the condition of a ‘phenomenology of spirit’, inasmuch as the latter is only in and through the excess of its exteriorization – to which it

nevertheless tries to provide a measure, a *metron*, and we shall see why the Greeks referred to this as *dikē*.⁴⁹⁴

Leroi-Gourhan, therefore, ultimately leads back to a philosophical perspective that was established with Plato. *Technics and Time, I*, however, took as its starting point that we should consider epiphylogenesis – such as it is inscribed in the organogenesis of Archanthropians, and as their default of origin, that is, as their *constantly recommenced* exosomatic organogenesis – to be a *feature common to both* Archanthropians (referred to generically by Bataille, after Bergson, as *Homo faber*) and *Homo sapiens sapiens*, the experience of the default of origin *characterizing* the life of the spirit as exteriorization (as *work*). Epiphylogenesis, in other words, is *what takes care [prendre soin] of the exosomatic situation*, where thinking means caring [*penser signifie panser*], and vice versa.

To this critique of the highly classical and metaphysical opposition re-established by Leroi-Gourhan between the *manual* and the *intellectual*, between *Homo faber* and *Homo sapiens* – a sapience that is rooted in what, after Huizinga, Bataille calls *Homo ludens* – we must, today, add further specifications, with significant implications for the meaning and history of epiphylogenesis.

We should begin by recalling Leroi-Gourhan's words concerning those he referred to as the Palaeoanthropians:

With the Palaeoanthropians [...] we witness the first upsurge of new cerebral aptitudes that both counterbalance and stimulate technicity. [...] Reflective intelligence, which not only grasps the relationship between different phenomena but is capable of externally projecting a symbolic representation [*schéma*] of that relationship, was the ultimate acquisition of the vertebrates, and cannot be conceived before the anthropoid stage [...]. All this occurs, at the level of 'gratuitous' intellectual operations, as if the gradual development of the frontal and prefrontal areas entails a progressively growing faculty of symbolization.⁴⁹⁵

That the 'new cerebral aptitudes' provide a 'counterbalance' to technicity is what entails that this 'reflective intelligence' is not itself technical. By suggesting that it consists in a *capacity for external projection*, however, Leroi-Gourhan places this into an immediate relationship with tertiary retention, thereby anticipating what we will soon see with Marc Azéma⁴⁹⁶: the noesis in which this 'reflective intelligence' consists *projects its dreams* and the 'representations' in which they consist onto the walls of caves, which, starting from the

Upper Palaeolithic, are adorned with what, for Bataille, amounts to the birth of art.⁴⁹⁷

Leroi-Gourhan, however, relates these ‘gratuitous intellectual operations’ to cerebral development, which would be the *origin* of these ‘exteriorized symbolic schemas’, and not to a transductive relation developing between the ‘interior’ (that is, the endosomatic), and the ‘exterior’ (that is, starting from the Palaeoanthropians, the exosomatic *and hypomnesic*). This hypomnesis establishes a new kind of feedback loop through a hypomnesic transductive relation, wherein a spiral forms through which the synaptic circuits that must be regenerated in each generation are metastabilized via what we call education. But, at the same time, education both ‘dephases’ itself and metastabilizes itself through social organizations, which ensure the intergenerational and transgenerational continuity of these regenerations – beyond the exosomatic transformations that occur under the impact of their productions.

By assigning the emergence of ‘gratuitous intellectual operations’ to ‘cerebral development’, Leroi-Gourhan ignores this question of education, which itself presupposes what Michael Tomasello calls ‘joint attention’, as well as hypomnesic exosomatizations that lead to the beginning of the process of grammatization, which supports the analytical and synthetic functions of what will become the ‘faculty of knowing’.⁴⁹⁸

Tertiary retention appears from the earliest moments of epiphylogenesis (the second and third volumes of *Technics and Time* at times incorrectly refer to tertiary retention as ‘tertiary memory’: it is not a question of memories but of retentions). But it is only during the Upper Palaeolithic that *hypomnesic* tertiary retention appears, which gives rise to an intergenerational and transgenerational form of joint attention that amounts to a *new attentional form*.

This hypomnesic attentional form is noesis properly speaking, that is, such as we recognize it, such as Bataille recognizes it within himself, and such that it opens the *traceological* possibility of various forms of ‘deep attention’, an affair that is less ‘cerebral’ than it is transgenerational, social and organological. It requires the appearance of new types of exosomatic organs: hypomnesic organs, that is, organs whose primary function is the exteriorization, expression, conservation and transmission of memory, which through this very fact becomes noetic.

9 The economy of the *pharmakon* and the hypomnesic exosomatization of the noetic faculties

After *Technics and Time, 3*, the question of the relations between primary, secondary and tertiary retentions and protentions has been systematically pursued further. Various retentional types have been specified, beyond purely psychic primary and secondary retentions: hypomnesic tertiary retentions, collective secondary retentions and accompanying collective secondary protentions, arche-retentions and accompanying arche-protentions, proto-retentions and accompanying proto-protentions. For his part, Yuk Hui has investigated tertiary protentions.⁴⁹⁹

Within hypomnesic tertiary retention, and with the concept of grammatization, new hypomnesic types have also been distinguished, in particular those emerging firstly from mechanical tertiary retention, which is the origin of the grammatization of the body and the proletarianization that occurred at the beginning of the industrial revolution (that is, at the beginning of the Anthropocene, which is as such both a Capitalocene and a new age of exosomatization), then through analogue tertiary retention, and lastly reticular, digital tertiary retention, which enabled disruption, the final period of the insolvent and unliveable Capitalocene that demands a leap (*Sprung*) into the Neganthropocene.

Digital tertiary retention stems from cybernetics, which for Heidegger was the final stage of metaphysics and the condition of the installation of *Gestell*.

The types of primary, secondary and tertiary retentions and protentions, and their arrangements, which form collective retentions and protentions, together constitute epochs that continue to unfold up until the ‘epoch of the absence of epoch’. These arrangements, which are overdetermined by the exosomatic evolution of tertiary retention, constitute the *history of the epiphylogenetic supplement* that sets off from [*enchaîne sur*] the history of the supplement as the play of retentions and protentions in general, as *Of Grammatology* described this supplementarity, and inasmuch as it constitutes vital *différance*. This connection [*enchaînement*], however, is a default of connection, a kind of *dis-connection* or *un-leashing* [*de-chaînement*]: *hubris*, the absence of any origin, a fate remaining always to come.

The epiphylogenetic supplement thus inscribes a *bifurcation* in vital *différance*, where it *makes an exosomatic différence*, which in the Upper Palaeolithic becomes that which *makes a noetic différence* – by passing through hypomnesic tertiary retention. This prehistory, which becomes proto-history and then history, is that of ‘spirit’ – in the

sense of *Geist* appearing to itself by exteriorizing itself. Hence this history has a palaeo-history, which is that of exosomatization, itself specifying the periods of prehistory, and, starting from the Neolithic, opening up the periods of proto-history, in the course of which, following on from the rupestral projections of the Upper Palaeolithic, the retentional and protentional conditions of the noetic attentional form we know today are consolidated, a form *that is now unravelling before our very eyes* in the *Gestell* – as the experience of the full and generalized proletarianization and de-noetization produced by algorithmic automation.⁵⁰⁰

The noetic stage ‘properly speaking’ emerges during the Upper Palaeolithic as the possibility of spatializing *mental* secondary retentions and protentions in tertiary form, and not just the motor behaviours of which tools are both the fruits and the traces. During the palaeogenesis of the epiphylogenetic supplement, exosomatization is functionally transformed, giving rise to functions that are not just endosomatic or exosomatic, but psychic and social, and which must be *cultivated* – through ‘cults’ and forms of worship that will lead to culture and eventually to its collapse into what Michel Deguy has called ‘the cultural’,⁵⁰¹ and which takes to an extreme level the philistinism that Hölderlin, Nietzsche and Arendt all saw coming.

If the evolution towards what we are here calling noetic *différance* passes through the stage of what Leroi-Gourhan called ethnic memory, then the latter, which is only a phase, has today become essentially phantasmatic: ethnic communities in the strict sense, *inasmuch as they are protected from exosomatic incursions* (and *inasmuch as they form what Milieu et techniques* called ‘ethnic cells’), have almost disappeared – with the exception of some micro-regions in Africa and the Amazon. This raises the question of what opportunities remain for noodiversity – where noesis primarily consists in such noodiversity as the intensification of psychic singularities – after the installation of *Gestell* as de-territorialization, in the process wiping out those idiomatic *différences* that can be constituted only on the basis of the diversity of idioms.

If idiomatic *différance* is the essential condition of noetic *différance*, then this is the very thing that is short-circuited by the idiomatic *indifférance* that seems to prevail with algorithmic anthropy. To investigate these questions – which, after the analyses of *to deinotaton* by Heidegger,⁵⁰² who would himself succumb to Nazism and anti-Semitism,⁵⁰³ can but seem literally terrifying and terrible – requires the constitution of the prehistory, palaeo-history, proto-history and history of the exosomatic and noetic supplement, both as a general

organology and as a pharmacology, where the exosomatic organ appears from the outset to be well and truly a *pharmakon*.

This organology that is also a pharmacology has continued to develop since *Symbolic Misery* and *Disbelief and Discredit* – where the noetic functions resulting from arrangements between endosomatic organs, exosomatic organs and social organizations are what general organology studies as an *economy* of the *pharmakon*. This economy, which is essentially a bio-economy in Georgescu-Roegen's sense – but where this means precisely that exosomatized life is no longer thinkable on the basis of biology alone – is the pharmacology of *general* economy in Bataille's sense, which is itself a libidinal economy in Freud's sense in *The Ego and the Id*.

Noesis, inasmuch as it characterizes what we call *Homo sapiens sapiens*, and such that we *recognize* it within ourselves – as Bataille affirms as he stands before the paintings of Lascaux⁵⁰⁴ – stems from the palaeo-history of the supplement through which the process of grammatization is engaged (in a sense that has been described on several occasions since *Technics and Time*, 3), and does so as the *intensification of the tension between negative pharmacology and positive pharmacology*, which is to say: as the question of the *therapeia* required by any hypomnesic tertiary retention.

Grammatization is a process, and this process opens up and constantly reconfigures the hypomnesic period of epiphylogenesis during which are articulated and disarticulated the faculties of knowing, desiring and judging.⁵⁰⁵

10 Double *différance* and noetic *pansée*

We must understand the concept of grammatization – which began with the appearance of hypomnesic tertiary retention as the exosomatization of individual psychic and mental contents, and as 'representations' – by referring to *La Préhistoire du cinéma*, where Marc Azéma begins by highlighting the *capacity to exteriorize oneiric images* to which cave paintings bear witness.⁵⁰⁶

In light of this recent work, we must refer the oppositional differentiations made by Bataille and then Leroi-Gourhan, between *faber* and *sapiens*, to *stages* in the history of tertiary retention (and of the primary and secondary retentions and protentions they make possible), which does not mean that 'thinking' would emerge only starting from hypomnesic tertiary retentions: it means that it would become noetic 'properly speaking', that is, as the exteriorization of *Geist*, and as the investigation of its own possibility *as such*, such that it gives rise to a

transgenerational feeling of being a ‘we’, only with the oneirological revolution⁵⁰⁷ that occurred during the Upper Palaeolithic.

One might object that this ‘properly speaking’ repeats Leroi-Gourhan’s ‘to a large extent’. Such an objection should not be left unanswered: *properly speaking* is here directed at the question of the *as such* and of what constitutes the *noetic spirit as such*, namely, its ability to *understand itself functionally as such*, which therefore constitutes a *function*, a function that is *characteristic* of any noesis – by way of, for example, metalanguages (in the senses of Barthes, Wittgenstein, Lyotard and Auroux) – but which appears from the first experiences of reproducibility in Benjamin’s sense.

(Contrary to superficial readings, reproducibility begins with cave paintings, which is the objection Adorno makes to Benjamin⁵⁰⁸ without understanding that this is what Benjamin himself says – rock art reproduction must be thought in relation to sexual reproduction-become-desire, that is, artifice, and by taking into account the self-referential *exception* that Bataille saw evidenced in the ‘man in the well’ figure.⁵⁰⁹)

The *oneirological transition* and its self-referential and metalinguistic consequences, that is, metaretentional and thereby hypomnesic consequences, but which are also, and by the *same* token, *anamnesic*, all form the entire stakes of the reading of the question of *Geist* in Heidegger, and in Derrida’s *Of Spirit: Heidegger and the Question*. But what is less clear is whether Derrida ever truly confronted the question of *care* [*pensée*] that lies behind all of this – and that lies behind it as noetic *différance*.

This is why *Technics and Time, 1* posited that noetic *différance*, which is no longer just vital *différance* and which seems to us to be exosomatic, is built on an ‘agreement’ [*con-vention*, a coming together] of flint and cortex that together constitute the prehistoric layer of the sedimentation within which are formed noetic preindividual funds ‘properly speaking’.

In this sedimentation of the noetic preindividual (which is also the issue in ‘The Origin of Geometry’ and in the interpretation given by Derrida in his ‘Introduction’), the tendencies of a specular ‘double *différance*’ are negotiated, such that

cortical evolution might well itself be codetermined by exteriorization, by the nongenetic character of the tool. There would be a double emergence of cortex and flint, a convention of the two, an arche-determination that would surpass them and that would be the double work of a double *différance* abysmally mirrored [*s’abîmant en miroir*]. The

whole problem will be to exhume the complex (transductive) dynamic of this ‘Epimethean complex’. Saying ‘to a large extent’ is a way of avoiding or forgetting this problem, of allowing its stakes to go unnoticed, the consequence of which is the reintroduction of a spirituality.⁵¹⁰

And, in this instance, the reintroduction of a pure, a-technological and a-pharmacological spirituality: *without default, in-fallible*, thoughtful, but not thoughtfully *caring* [*non pansée, ni pansante*], and *not before* being (such will be the dialectic of Plato in *Phaedrus*).

11 Lost in disruption: not-being-there

In a *collapsing gap* [*écart effondremental*] in relation to Heidegger’s *fundamental ontology*,⁵¹¹ but also by following this fundamental ontology as closely as possible (given my deficient understanding of the German idiom⁵¹²), in this gap that is a fault, a wound into which everything always threatens to collapse, therefore, through being infected, the first three volumes of *Technics and Time* have tried to conceive the necessity of the immeasurable upheavals generated by the *hubris* that is the not-being-there of exosomatization as *constituting time* while destituting it, and by this process that, occurring in *two* moments, *oscillating* between two times, is the doubly epokhal redoubling, through which the vagaries of intermittence proliferate.

Today, this upheaval is reaching a limit, *peiras*, which is the absence of epoch.⁵¹³ This negative *epokhē* that is the absence of epoch is also, overwhelmingly, the accomplishment of nihilism.⁵¹⁴ The current absence of epoch, which is the reality of the *state of emergency* that is the end of the Anthropocene, requires a transvaluation of what Nietzsche himself called transvaluation, which he could not pursue beyond the *Da* that was his: *the Da of Nietzsche’s epoch was not yet aware of the accidents that would befall ours* (which is also to say, first and foremost, our analogue and digital tertiary retentions – inasmuch as they would reshape capitalism in ways completely different from what Nietzsche, Marx or Engels would ever know). Nietzsche would never know the point at which *we* ourselves have arrived, via the historical fulfilment of capitalism, that is, as *absolute non-knowledge*.

After the great ordeals of Nazism and Stalinism, and after their calamitous consequences for academic knowledge, still widely ignored, and in particular *for philosophy* – consequences that have directly affected noesis ‘in the making’, and which only add to the immense process of proletarianization and disapprenticeship in which capitalism has consisted, where the latter becomes purely and simply

computational by profoundly distorting the sciences, which are literally disintegrated,⁵¹⁵ as well as life-knowledge [*savoir vivre*] and work-knowledge [*savoir faire*] – we have now reached the extremity of the Anthropocene.

Lost in this disruption, close to despair, we *await* a ‘shift’, if not to the Neganthropocene – an expectation that, ‘initially and for the most part’,⁵¹⁶ presents itself only in the mode of negation, itself founded on a denial. The absence of epoch is denied because it constitutes the abyss [*sans fond*] – *Abgrund* – that we must relate to *hubris*, which Heidegger ultimately *did not do*, despite his reference to the *to denotaton* that is the human being in the language of Sophocles and the chorus of *Antigone*: the *frightening*,⁵¹⁷ which it is only in that it is *primordially affected* by this *hubris*.

The bottomless abyss [*sans fond*] – which may yet have a bottom, which Heidegger perhaps failed to think, the *ground that there is* (*es gibt*) and that sometimes we *touch when in true ordeals we ‘hit bottom’*, in the encounter with that ‘rock bottom’ which provided the title for a work by Robert Wyatt⁵¹⁸ – there, in that *there is that is not*, this abyss, this ‘without ground’, would be as such a *double bottom* that ‘presents’ itself only by ‘absenting’ itself, that is, by doubling or splitting itself [*se dédoublant*].

It is this ‘presentation in absence’ that Derrida called *différance*. The double bottom would be what, as *Anwesenheit*, presents itself only in the *Gegenwart* that is the *today in general*, and especially *and very singularly in the today of today* – today as *never before* – *only by default*, *only by the default*, as the default, and as *the new stage of a différence that remains to be made* in and after what is called the Anthropocene.

Thought [*pensée*] can today be only what we could therefore call, *on the condition* that we write it, and as that which thus refers to *différ(a)nce*, *the experience of care-fully thinking* [*p(a)nsen*] how the absence of epoch must, as a last resort, constitute not a ‘new epoch’ but rather *another epokhality*, which would come to *think care-ful treatment* [*pansements*] *otherwise*, that is, *cares*, that is, *illness and health*. But for this it would be necessary to *reread Nietzsche with Canguilhem*, and *reread Heidegger with that Nietzsche* who would, precisely, *escape Heidegger*.

Let us call the Neganthropocene the possibility of what presents itself firstly as impossibility, which is to say, as wholly other – as *a wholly other era*.

12 *Prometheia, epimetheia, hermeneia*

It is on the basis of my first attempt to interpret the myth of Prometheus, Epimetheus and Hermes in *Protagoras* that what I call thinking *today*, that is, *in the Anthropocene*, means *taking care* [*prendre soin*]⁵¹⁹ of the *pharmakon*. In passing through ‘Plato’s Pharmacy’, this interpretation of the myth narrated by Protagoras led me to argue that it is the *pharmakon* derived from the process of exosomatization that constitutes the *shock* (most often after a very long delay, as in the ‘dreadfully ancient’⁵²⁰) on the basis of which we think. It is this shock that we must *interpret* as that which, each time, puts back into play (into question(s)) *aidōs* and *dikē*, which are the dimensions of the *therapeia* required by the *pharmakon*, that is, the dimensions of care whose fruits form the knowledge that provides the hermeneutics of the *pharmakon*. Such an interpretation constitutes a bifurcation – inasmuch as a shock occurs in a doubly epokhal redoubling by echoing and replicating the primordial shock of the default of origin.

Care-ful thought [*pansée*] is always a form of *Sorge*, which, according to Heidegger’s vocabulary in *Being and Time*, is the ‘originary’ dimension of ‘originary time’⁵²¹: *Sorge* is precisely what, for Heidegger, *takes care of the originary*. What we are positing here is that this care will always pass through and will always be the care of what, in *Protagoras*, presents itself already (well before *Phaedrus*) as a *pharmakon*.

Care-ful thinking [*panser*] always consists in *retracing transgenerational circuits of transindividuation through intergenerational circuits of transindividuation*, where these transgenerational circuits form arrangements of retentions and protentions via which what Simondon called the transindividual is metastabilized, and which characterize *intergenerational epochs* themselves belonging to *transgenerational eras*. In its various forms, *pansée*, which is the *forming* of noesis – as life of the spirit in *all* its forms, the knowledge of how to live, do and conceptualize – is today being destroyed by the *generalized proletarianization* that is our experience of the Anthropocene as de-noetization, brought to its ultimate extremes as the disruption.

The life of the spirit is exteriorization inasmuch as it constitutes a *loop*, wherein the *secondary interiorization* of primarily effected exteriorization constitutes, in an *après coup*, *noesis as technesis* – which always ultimately leads to the formation of a new *pharmakon* generated by the organological condition of the noetic soul insofar as it dreams, that is, inasmuch as it can realize its dreams, and can do so only at the risk they may turn into nightmares.⁵²² Such a *pharmakon* may be a new instrument, a new drug or a new work [*oeuvre*]: a work

works only by inscribing itself into a present, which it temporalizes only by spatializing it as its *différance*, a *différance* that is pharmacological *through and through*.

Any work is a tertiary retention, and, therefore, a *pharmakon*, whether this refers to *Being and Time* or *Margins of Philosophy*, which included the lecture on ‘Différance’. Kant reminds us of this in ‘What is Enlightenment?’, where he affirms that a book is what can also and firstly, flattering the ‘laziness and cowardice’ of those who want nothing more than to remain minors, ‘have understanding in place of me’, just as a ‘spiritual adviser’ can have a conscience for me and a doctor can dispense with my taking care of myself *by myself*⁵²³ – for therein lies health: as this knowledge that I can have of life only by *singularly* being this form of life that I am *as such* only noetically. This is also what Canguilhem says.

The circuits of transindividuation in which the life of the spirit consists, within which care-ful thought [*pensée*] presents itself in highly diverse forms, are induced by the shocks provoked by successive types of tertiary retentions and of the *différences* in which they each time singularly consist, in and as the history of the supplement, constituting the organogenesis of *pharmaka* over the course of the time of noesis, that is, in the course of its *evolution*, which is the evolution of what Canguilhem described as the technical form of life.⁵²⁴

Let us call *pensée* the accumulated but constantly renewed, revived and *reactivated* history of *ways of thinking and caring* that result from the set of questionings and challenges constantly provoked by *pharmaka*. This is what Husserl himself thinks and cares about in ‘The Origin of Geometry’, geometry being constituted as apodictic knowledge through the *exercises* of polishing, surveying and writing. It is by being themselves socialized and transindividuated that these ways of thinking and caring always lead, eventually, to the generation of new *pharmaka*, emerging from the therapeutic responses to previous *pharmaka*.

Pensée, accomplished, that is, transindividuated, and transindividuated as the *therapeutic responses* in which these cares *consist*, desists and is destituted over time inasmuch as it always engenders, with it but also against it, new pharmacologies – and this is what calls for the *anamnesic reactivation* of the condition of ‘*pensée*’ by *new forms* of *pensée* responding to new types of *pharmaka*. It is ultimately this *loop* that constitutes the ground of what Sigmund Freud describes in *Civilization and Its Discontents*.⁵²⁵

13 Grammatization, noesis and the Socratic dialogues

The shocks of which the ‘history of the supplement’ is composed (a history that Derrida would never actually write) form a chain, like a set of replicas of what Blanchot called the dreadfully ancient, which, having never been present, remains always yet to come – ever since, at some time during the Upper Palaeolithic, a process of grammatization was initiated, which Blanchot’s friend Bataille considered to be the birth of art.

Marc Azéma, whose work we have already mentioned, has shown that this ‘birth of art’ was also the beginning of grammatization – confirming, but on a different basis, the hypotheses put forward by Leroi-Gourhan and discussed by Derrida. By understanding this as a *process of grammatization*, which Derrida expressed as a ‘history of the supplement’ that remains to be carried out (which cannot be done merely as a history in the strict sense, since it is the condition of possibility of any history, including ‘natural history’, as Derrida never ceased to show, to the point of himself abandoning the task⁵²⁶), I try to care-fully rethink [*repanser*] this ‘history’ as organogenesis and as *neganthropological différance*.

I have borrowed the concept of grammatization from Sylvain Auroux.⁵²⁷ ‘Grammatization’ means both the *reproduction* and the *discretization* of the retentions and protentions woven in noesis. This is a question of repro-duction, and not just re-pro-duction – as is explained in *Technics and Time*, 3⁵²⁸ – just as the process of exteriorization is what constitutes interiorization in a transductive relation, as is explained in *Technics and Time*, 1. This weaving, for which *tertiary* retention is irreducible, and constitutes noesis insofar as it *makes [fait]* (the) *différance* at once as exteriorization, reproduction and discernment, is also what *undermines [défait]* noesis: it is as such that writing is a *pharmakon*.

Noesis, as I ‘translate’ this into French with a word that is itself untranslatable, ‘*pensée*’, occurs [*se faisant*] – as process of exteriorization, expression, invention and realization of works in all their forms – only by *undoing* itself, *defeating* itself [*se défaisant*], and undoing itself *through its grammatization*. *P(a)nsée*, thus conceived, is not limited to the discretization of mental flows: gestures have been analysed and reproduced by automatons ever since the artifices of Vaucanson, and are both *constituted* and *altered* by grammatization, which also means that they are part of the destruction of noesis by noesis (such as through the grammatization that occurs in the engineering and design offices that organize production in factories where automation is imposed).

The same is true for sensory perception and intuition, (re)constituted and altered by the hypomnesic retentions derived from analogue grammatization (which, too, discretizes it, firstly chemically and/or acoustically, through camera movements, framing, editing and so on). And this is also the case for the functions of the understanding, social dynamics and so on, all of which can now be formalized and calculated via data formats, interoperability standards and treatment algorithms.

Such are the true stakes of Marx's materialism. Speech, too, is itself 'grammatizable' only because it is composed of the gestures made by the tongue and the mouth, as was noted by Joseph Beuys⁵²⁹ – these being the linguistic gestures that enable the play of differences conceived by Saussure and deconstructed by Derrida in the name of *différance*.

Gestures are short-circuited by their discretized reproduction when the proletarianization of manual workers is concretized through the use of the automatons of *mechanical tertiary retention*, and as the onset of 'large-scale industry', that is, of industrial capitalism. But this process was care-fully treated [*pansé*] by Socrates in relation to the hypomnesic field that is writing. *It is in this light that we should reread the history of 'metaphysics'*, and, more generally, the history of philosophy, at the origin of which, contrary to what is suggested by hasty readings of Derrida and Plato, Socrates does not 'condemn' writing: he prescribes it.

The Socratic prescription (*mē amelēsēte*, do not be careless) remains locked within the *différance* of the texts of Plato, inasmuch as Plato himself becomes *indifférent*, patiently and inexorably concealing it behind his *redefinition* of the dialectic, beginning with the erasure of dialogism in *Phaedrus*, which puts forward a dialectic *exclusively* subjected to the play of analysis and synthesis – analysis and synthesis becoming the play of *being* and constituting its very truth. Socrates, on the other hand, who still belonged wholly to the tragic age, posited that the *pharmakon* is the irreducible condition of all noesis – and that he is as such being faithful to the piety that commemorates the abduction and return of Persephone to Eleusis every spring.⁵³⁰

For Socrates, writing is a *pharmakon*, and the therapeutic prescription of this *pharmakon* is above all *a way of life constituting a technics of self and others* (a *pansée*) that consists in undertaking that dialogue made possible by reading and writing – and this is why, before questioning the slave Meno, Socrates asks him if he knows how to read. And, just as Plato begins to prescribe it in *Phaedrus*, this is what the dialectic loses sight of, to be blocked forever in the later dialogues: *Phaedrus* thereby lays the foundations for the *Republic*, *Theaetetus*

and the *Sophist*, that is, for the ‘history of being’ as the ‘forgetting of being’.

14 The *hermeneia* of the default of origin, the tragic paradox of knowledge and proletarianization

The contemporary question of proletarianization stems from the extreme concretization of tragic experience such as it consists in the experience of the *pharmakon* and its irreducible duplicity – of which the snakes of Hermes and Asclepios are the signs, as Aby Warburg made clear in his lecture on the serpent ritual.⁵³¹

The duplicity of the *pharmakon* – that is, of the exosomatic situation – results from the ‘proletarianization’ in which, in one way or another, the exteriorization of knowledge *always also*, and ‘always already’, consists, even though exteriorization is the *condition* of the constitution of knowledge itself. This is a condition of possibility that Derrida consequently described as a condition of impossibility, which means the condition of the impossibility of it *finishing*, that is, a *dif-fé-rante* condition.

To think care-fully [*panser*] is to experience this ‘stricture’ that stretches between possibility and impossibility *as the play of retentions and protentions*. To care-fully think *today*, and to care what ‘today’ means (which is in one way or another what *panser* always means), is to be capable of caring for this stricture that in earlier forms of care-ful thought was mostly concealed – which does not mean that these earlier forms of caring did not yet think, or that they did not think or care within the stricture, or that they cared nothing about and thought nothing about the stricture: it means that, today, *it is this stricture that, as such, puts us in question at the risk of interrupting any possibility of questioning*.

It is already this pharmacological condition of all *pansée*, that is, inasmuch as care-ful thought consists in an *organogenesis*, to which Protagoras will refer in his scintillating language. And the entire Platonic apparatus will be constructed against this, so as to reduce it to silence, which will in effect mark the end of the tragic age and the opening of the ontotheological age. This is what is still perpetuated today by the Platonist Alain Badiou – despite the teachings of Marx, which he also claims for himself but in so doing forgetting *everything*, and first of all the critique of political economy that is *The German Ideology*.

It is Prometheus (requested by Zeus), redoubled by Epimetheus (who ‘wants to do the distributing’), himself in turn redoubled by Prometheus (who must steal ‘the fire and the creative genius of

tekhnai'), and that Hermes finally rejoins, conjoins and in a way covers over, even erases, through a reversal (as when he made the cattle of Apollo that he wanted to steal walk backwards, and *thus put into reverse the traces of their footsteps*,⁵³² thereby constituting, as god of writing and reading, the hermeneutic and *as such* mystagogical dimension of every tragic therapeutics⁵³³ of the *pharmakon* that is the fire stolen from Hephaestus) – it is Prometheus, Epimetheus and Hermes who *constitute* the question of what is called *panser (noeō)* in and as the *hermeneia* required by the default of origin of *pansée*.

To try and *care-fully think* in *this way* is to interpret the *pansée* inherited from Nietzsche⁵³⁴: we think care-fully only after that stupidity through which *pansée* comes to us, in some way precipitously, always and ever anew – and that we must always interpret anew, which means that our thinking and caring is *only ever intermittent*.⁵³⁵ To try to think care-fully in this way is to thought-fully care about the fact that *panser* involves accepting this intermittence – as we are taught by Socrates (in *Protagoras*) and by Aristotle (in *Metaphysics*), both of whom refer on this score to Simonides.

I have myself evoked this intermittence by referring to the allegory of the flying fish,⁵³⁶ who sees the water only by leaving it, but whose inevitable fate it is to plunge back into it, and therefore to constantly forget whatever it believed it had learned during its flight over the aquatic surface.⁵³⁷ In *Phaedrus*, too, the allegory of the ‘winged soul’ turns on this intermittence.⁵³⁸ But it was ultimately to turn against this that Plato introduced the notion of the dialectic as a movement of the question of truth, become *orthotēs*, in Book VII of the *Republic*.

As I understand it through my heterodox interpretation of Aristotle’s treatise, *On the Soul*, water is the *analogon* of the prosthetic milieu: the latter constantly misleads us but nevertheless bears us as this *hypokeimenon* through which we can and must find the resources to act on the urge to leave this milieu – through a moment of elevation that is always (already) a relapse, a falling back. This *hypokeimenon* is epiphylogenetic, hypomnesic and pharmaco-logically retentional, which is to say that it is composed of tertiary retention. This is what Bergson was never able to think about care-fully, however close he may have come to doing so⁵³⁹ – nor after him was Deleuze, and in truth neither was Simondon, even though, like Derrida but in another way, it was Simondon who made it *p(a)nsable*.

15 Today

Since November 2014,⁵⁴⁰ in order to try to care-fully think about the disruptive, automatic and reticulated society that has arisen since

1993, I have revived these questions from the perspective of theories of (positive and negative) entropy derived from thermodynamics, biology, cybernetics and information theory. I have done so in the dual context, on the one hand, of the development of ‘big data’ and applied probability theory,⁵⁴¹ and, on the other hand, of the worldwide debate concerning the Anthropocene.

This new path of *pensée* tries to confront the proletarianization of *pensée* as such, celebrated by Chris Anderson in his article ‘The End of Theory’,⁵⁴² where he asserts that data science makes linguistics ‘obsolete’, for which Google substitutes the applied mathematics of ‘linguistic capitalism’.

This new path of *pensée* became extremely steep when, in April 2015, I read, in a work collectively authored by *L’Impensable*, these words spoken by a boy named Florian, fifteen years old at the time of writing:

You really take no account of what happens to us. When I talk to young people of my generation, those within two or three years of my own age, they all say the same thing: we no longer have the dream of starting a family, of having children, or a trade, or ideals, as you yourselves did when you were teenagers. All that is over and done with, because we’re sure that we will be the last generation, or one of the last, before the end.⁵⁴³

In its most recent period, the Anthropocene, which everyone currently understands in terms of the challenge of climate change, amounts to *an unprecedented and incommensurable putting in question* that suspends and breaks all those circuits of transindividuation established throughout the millennia from the Neolithic to the Great Empires, and through the various theologico-political civilizations, and finally secular civilizations. This was a matter of learning to *create such circuits with the pharmaka* that made them possible, and that did so as all those *archives* that, whether explicitly or not, hypomnesic tertiary retentions always constitute, and which underpin the retentional systems in which social systems fundamentally consist.

At the end of the Anthropocene, that is, *today*, and as the experience of disruption, *hubris* as such (the notion of which led to the formation of Pre-Socratic Greek civilization and therein the noetic foundations of the West) returns to mortals as a massive increase of entropy on a global scale, and necessitates the development of an entropology. But, in contrast to Lévi-Strauss’s nihilistic discourse at the end of *Tristes Tropiques*, when he refers to such an entropology in a rather

disillusioned tone,⁵⁴⁴ I argue that this entropology more profoundly calls for a *neganthropology*.⁵⁴⁵

In the remainder of this text,⁵⁴⁶ I will try to draw the consequences that follow from the Anthropocene having reached its critical phase, and I will attempt to do so by reconsidering what Derrida named ‘*différance*’ – as the neganthropological condition of thinking.

16 Disruption

Christophe Bonneuil and Jean-Baptiste Fressoz distinguish various periods within the Anthropocene (Thermocene, Thanatocene, Phagocene, Phronocene and Polemocene). As for the new, current and, if not ultimate, at least penultimate or ante-penultimate period, it constitutes the entry into a critical phase of the Anthropocene that will itself undoubtedly be divided into a number of sub-phases. Here, ‘critical phase’ means both that it is leading to a denouement, to a *katastrophē*, and that we must, therefore, make a decision, *krisis* – which we can relate to a dis-covering, *apocalypsis*.

Such a period would be the commencement of the *impossible critique* of the Anthropocene, that is, of its analysis and its *pensée*, which, constituting the *synthetic possibility* of its *analytically impossible* overcoming, would pursue the question of *hermeneia*, occurring in and as the *après coup* of *prometheia* and *epimetheia*, and as the *ground* of any *heuristic*, that is, of research, science, thinking and care, as well as teaching (didactics), and, especially, secondary and tertiary education intended as pedagogical preparation for science, research and *pensée*.

This means, here: dedicated to engendering a bifurcation that would be *analytically impossible from the internal perspective of the ‘system’ from within which it is produced*.

What I am here calling ‘impossible critique’ therefore means the *impossibility of keeping it to the analytical plane*, and the *necessity of projecting it onto the synthetic plane*. This amounts to an interpretation of what Whitehead called the function of reason inasmuch as it *decides [tranche]*. We will see why such a *necessary impossibility* must be conceived *and cultivated* as the *improbable possibility in this sense* of a neganthropic bifurcation.

With respect to such questions – *hermeneia*,⁵⁴⁷ heuristics, didactics, pedagogy – it is striking to note how Derrida and GREPH foresaw what is happening today, and yet how that epoch (of the 1970s and the Haby Plan) *still managed to drastically underestimate*, in a way that in retrospect is startling and literally unimaginable, the *extreme gravity* of the situation that was then beginning to take shape

(the excessiveness of which would receive consideration only from Heidegger, and on the basis of the Greek question of *hubris* – even though he himself failed to draw the consequences).

In this extremely grave situation, any form of true noetic knowledge necessarily becomes, as *true pensée*, research (*heuristics*) into an exit from the Entropocene that is the Anthropocene, so as to enter the Neganthropocene, and does so as therapeutic interpretation (as *hermeneia*) of the pharmacological situation.

Let us not forget that *Of Grammatology* spoke of monstrosity, which for Derrida announced itself ‘in the form of an absolute danger’ through ‘what is still provisionally called writing’:

Perhaps patient meditation and painstaking investigation on and around what is still provisionally called writing [...] are the wanderings of a way of thinking that is *faithful and attentive to the ineluctable world of the future that proclaims itself at present, beyond the closure of knowledge*. The future can be anticipated only in the form of an absolute danger. It is that which breaks absolutely with constituted normality and which can announce itself, *present* itself, only as a form of monstrosity.⁵⁴⁸

Neither Derrida nor GREPH saw coming what had in fact already arrived ‘on doves’ feet’, which is now, if not ‘present’, at least latent, and at times patent: a telluric ‘disruption’ through which it seems as if *everything* is destined to disappear, *beginning with critique* (and it is no doubt Maurice Blanchot who was here the most analytically and synthetically lucid – and therefore the most serious, the gravest, if not the gloomiest).

In this epoch, we still greatly underestimate the gravity of what weighs upon us and seems to crush us. Today, faced with the Anthropocene and the gravity that expresses itself in and as its critical phase, to which Florian bears witness in no longer being able to have diurnal dreams, a period in which the question of an organology of nocturnal dreams also arises (which lies behind the analyses of Jonathan Crary⁵⁴⁹ as well as the 2009 Ken McMullen film, *An Organization of Dreams*), the challenge is not to plead for a ‘right to philosophy’,⁵⁵⁰ as Derrida did with GREPH (and to defend the perpetually-threatened teaching of philosophy in the final year of French secondary education – a right that must also obviously be defended). The only *legitimate* approach, the only approach capable of legitimating such a defence, attesting to it as a *self-defence* [*légitime défense*], is to assume the *duty* of philosophy.

The *duty* of philosophy is *pensée*, a new care-ful thinking of what is called thinking – a *pensée* of *pensée* such that it requires us to care for thinking, including from within an organological and therefore pharmacological perspective wherein facts are destiny, *imposing in a new way* the question of how to *distinguish* the right facts, and *as their différence* against the *indifférence* of de-noetization.

What is the duty of philosophy – and of the *pensée* that philosophy tries to embody in its broader vitality, that is, in the acuity of its untimely timeliness – to encounter, to listen, to receive and to interpret the testimony of Florian, and to do so in a context where we suddenly see from Pope Francis an unhoped-for, if not totally unexpected, opening, and which calls for a response?⁵⁵¹ And in what dialogue with religions? This question arises in France in a singular way after the tragedies of January and November 2015, then of 14 July 2016, after which 14 July will *forever more* be a national *mourning* of the *national holiday* that, since 1790, has celebrated the *Fédération*.

These questions of our time do not present themselves: they absent themselves – through what I have attempted to describe as a denial. This is what results from an absence of epoch that is the suffering of Florian, and that Daesh exploits so as to mobilize, in France and in the entire world – in the youth of the entire world – the agents of what we can call negative sublimation. So long as we have failed to reflect on the excessiveness of the Anthropocene, of which suicidal and criminal behaviours of this kind are symptoms, we will only increase its destructive power, which accumulates to the limits of the Anthropocene as it reaches its greatest extremity. It is this extremity that we call the disruption.

17 Thinking care-fully about the emergency

The *duty* of philosophy imposes itself *today* in a state of extreme urgency – an emergency [*urgence*] that has long been foreshadowed. The question of the right to philosophy should in no way allow this extreme state of emergency to be obliterated or denied – under the false pretext, for example, that this urgency would make thinking impossible. *It is only through urgency that it is possible to think, and this is why all thinking cares [panse]*. It is possible to think care-fully [*panser*] only in and as the very urgency of thinking that cares [*pensée qui panse*].

The first duty of philosophy is to consider the sudden and *absolutely* singular aggravation of a situation that has been described as '*l'homme sans gravité*',⁵⁵² man without gravity, without weight or

seriousness, but the result of which is *extremely grave* – which is what gives to Florian’s words their immeasurable weight.

With this *gravitational loss* characteristic of our age, the ‘grave’, as ever and paradoxically, no doubt presents itself in its very gravity – but does so, in general, through a denial whose forms vary widely, and in relation to which Florian constitutes an exception. To philosophy falls due the duty of *eliciting* what has thus been *denied*, that is, the grave – the immeasurable weight not just of the world [*monde*] but of the squalid and the befouled [*immonde*].

This falling due that, in the twenty-first century, it falls to philosophy to think care-fully about – philosophy thereby finding itself *obliged* to think and care *otherwise*, that is, *to change the very meaning of thinking* – this falling due, the maturing of this obligation, presents itself not just as the test of the always late tenor of this *pensée* called philosophy, but as the ordeal of the absolute monstrosity that we have seen was heralded by Jacques Derrida in the opening of his *Grammatology* – and it is this to which Florian, too, bears witness like none before.

A *duty of retrospection* arises out of the inadequacy of the philosophical analyses appearing after the Second World War, from the deconstruction of metaphysics to Marxism and psychoanalysis, which became institutions and ‘small business’ – in Jean-Luc Godard’s sense⁵⁵³ – but so too did epistemology and anthropology, among others.

Only a consideration of the ‘gravity’ of the next fifty years, after a critical retrospection of the past fifty years of philosophy, has any prospect of *earning back the credit* required for it to take care of knowledge, of science, of law itself, *with* these forms of knowledge, and of all other forms of the life of the spirit, and therefore of art: all these figures that seem, today, in the eyes of the vast majority of our fellow men and women (and especially the youngest), to be little more than zombies.

18 The tribunal of the future and the organology of reason as the *différance* of becoming

In 1967, *Of Grammatology* situated itself from the outset as lying within the epoch of the absence of epoch, that epoch of ‘absolute danger’ that presents itself ‘as a sort of monstrosity’.⁵⁵⁴ It is far from clear, however, that readers of Derrida have yet taken the measure of this situation – any more than did that reader of *Of Grammatology* who was Derrida himself. This was in fact one of the issues discussed during my thesis defence.⁵⁵⁵

The contemporary situation is that of an imminent catastrophe of which *Of Grammatology* was an advance warning, and it is this *imminence* that twenty-two signatories tried to formally declare in an article published in *Nature* in 2012, with the title, ‘Approaching a State Shift in Earth’s Biosphere’.⁵⁵⁶ It is a question of a catastrophe or a ‘shift’ (an upheaval, a mutation, a bifurcation) – which we can understand in the (different) senses of René Thom or of Ilya Prigogine and Isabelle Stengers. Conditions are gathering for a bifurcation but as yet we do not know in what direction it will propagate. Philosophy and with it knowledge in general *have the obligation, before any other task*, of weighing or rather of *exceeding* the gravity of this situation: of highlighting and *curatively bearing hubris* such that it inverts not only the traditional instruments of measurement but the concepts that they materialize.

Philosophy must endure the anticipation of the bifurcation and the obligation that it establishes as the experience, brought to its limit, of structural melancholy, which it has become crucial to *express as such*, and which for Aristotle originally constitutes the ‘negative’ treasury of noetic life. The consequences of this situation can now be ignored only if we remain not only blind but cowardly, in the precise sense of cowardice that befell Heidegger in his time.

The *protentional* structure of our age, awaiting a *shift* whose probability is widely felt, and expressed through a symptomatology of denial – in the face of which Florian’s candour erupts – is accompanied by a *stunning mutation of the arrangements of retentions and protentions* that constitute the expectant, pending beings that we are. This mutation has everything to do with the industry of traces (the ‘data economy’) as well as with the fulfilment of the Anthropocene, which is nothing other than the *effective fulfilment of nihilism as the generalization of entropic becoming*.

This *structurally* entropic becoming as effectively fulfilled nihilism summons reason itself before the tribunal of the future [*avenir*], conceived as the *différance* of becoming [*devenir*].⁵⁵⁷ Reason thus summoned is what Alfred North Whitehead understood both as an organ and as a function – at the core of what constitutes a speculative cosmology.

The duty of philosophy today is to consider the entropic catastrophe to which the Anthropocene is leading us – which is an event, but which is more precisely the advent of nihilism as Entropocene. I say this, just as Lévi-Strauss said that (in the Anthropocene) anthropology becomes an entropology.⁵⁵⁸ But, unlike Lévi-Strauss, I do not believe that we should abandon the *responsibility* of which neganthropology is the question as well as the study. Neganthropology studies the

conditions of possibility and impossibility that bifurcations always require, in a manner that exceeds all calculation and analysis, that is, that *exceeds the understanding* by convoking reason.

Neganthropology can be constituted only within a speculative cosmology, that is, only by conceiving the cosmos as a process within which localities are produced that give rise to various feedback loops or discontinuities of the kind that Schrödinger, Atlan and Prigogine have all tried to describe, and where, on another register that I can only briefly mention, so too did Shannon, Wiener, von Foerster and, in some respects, Simondon.⁵⁵⁹

These thinkers, however, all leave out one essential element of the neganthropological situation, one that requires us to reinterpret Derrida's most fundamental concept – which is less the trace, the arche-trace or arche-writing than it is *différance as the deferral of entropic and anthropic deadlines by pansée*.⁵⁶⁰

19 *Indifférance* and pharmacology

Différance traverses the fields of what, describing the operating principles of the Collège international de philosophie, *Le Rapport bleu* called 'interscience'.⁵⁶¹ Having already retrospectively interpreted and commented on this concept of interscience in *States of Shock*, I will not return to it in detail here. In that work, I posited in principle, and in reference to the creation of the University of Bologna, that 'an "*interscience*" for the twenty-first century must take shape within universities worldwide, united by an internation of law'.⁵⁶²

The internation was conceived and projected by Marcel Mauss, who at that time, in 1920, foresaw the coming reticulation of the world, and the acceleration it would produce. Such an acceleration, which has everything to do with the current grave severity of generalized entropy, and which deprives Florian of the right and faculty of dreaming, is the reason why I state: 'This interscience, which is inseparable from techno-logical becoming, must undertake and critique the genealogy of the acceleration of the transfer time of technologies, in order to effect a bifurcation'.⁵⁶³ And I add: 'This absolute acceleration short-circuits governments and public powers, that is, it literally disintegrates the political sphere as such'.⁵⁶⁴ It is, in other words, a *machinic regime of différence* that destroys law as that which constitutes the *différance of organological facts* – which is to say, here, in this case, of techno-economic facts, which is the key issue in Polanyi⁵⁶⁵ – thereby establishing *indifférance*, that is, de-noetization.

Furthermore, in this 'epoch of the absence of epoch', numbed by its immeasurable supplementarity and indifférent appearance, that

is, where machinic *différance* short-circuits noetic *différance*, ‘indifférentiating’ it, in such an absence of epoch, then, industrial *hypomnēsis* is the *Wirklichkeit* of the anamnesis that is missing [*qui fait défaut*], and where, as I said in *States of Shock* (which we must quote here at length):

The question of the inside and the outside of the academic sphere, therefore, becomes that of the way in which these *hypomnemata* that are [digital] tertiary retentions constantly redistribute the process of psychic and collective individuation that is the noetic community in totality (the internation). And this redistribution of the effective conditions of individuation is not confined to the academic sphere [...] but extends to extra-academic processes of collective individuation. The latter include all those collective individuation processes with which the academic collective individuation processes that are the disciplines must compose, and with which they must work, while forming as well their objects, beginning with the process of collective individuation that is language.

This *hypomnesic overflow* both frames academic life at its most intimate levels (if tertiary retention is indeed the condition of reason, for example, ‘addressing the entire reading public’) and at the same time constitutes its heteronomy, because this also frames its outside, which can in any case appear as such *only* on this condition. This overflow, this heteronomy and autonomy in which it transforms itself – by the therapeutic work of the academic disciplines – is today constituted by a global industrial landscape (that of the internation), so that the inside work of academic transindividuation is thoroughly transfixed and framed by digital *hypomnemata*.

These digital *hypomnemata* have become the framework through which all extra-academic social relations are grammatized (familial relations, friends, work relations, commercial, financial, political and diplomatic relations, and so on), rearranging the fabric and the retentional material of psychic life at its most intimate, as well as the systems of retentional (and protentional) selection in which consist the most institutionalized forms of social life, and of which the academic disciplines are in principle the referents.⁵⁶⁶

To make the *right* to philosophy into the *duty* of philosophy is to conquer this right *in and through a positive pharmacology*, that is, through

a *différance* of the *hypomnesic trace* inasmuch as it imposes itself (literally, mechanically, analogically or digitally), each time *singularly*, as the bearer of a negentropic potential and a neganthropological individuation – as the *individuation of the internation, of the intergenerational and of an interscience* founded on the *theory and practice of the instruments* of knowledge.

Tertiary retention, that is, *hypomnesis*, is the *pharmakon*. We have seen that Socrates did not ‘condemn’ writing: he wanted to submit it to a prescription, which Plato called dialectics, and which he described as that knowledge which *precedes* the practice of the *pharmakon*. Derrida countered that it is the *pharmakon* that conditions (and precedes) prescriptive dialectics. He showed, in other words, that there can be no academy or university without condition – and that any philosophy is a positive pharmacology. This is obviously not what he himself actually *said*. But it is how he wrote, that is, what he *did*. And so this is how, in so doing, *he made the différence*, which nevertheless, *in that, escaped him*.⁵⁶⁷

Nobody’s perfect.

20 Regimes, eras and epochs of *différance*

The questions that arise as to the duty and the right of philosophy and to philosophy, in this highly entropic environment that prevents Florian from dreaming, demand a detailed reading of an article by Lawrence Lessig published in *Harvard Magazine* in January 2000. Before surveying and then specifying the ‘gravity’ of the *indifférance* of which it is a matter of *making the différence* after Derrida, I would like to linger a little on the question of the *relationship of philosophy to law and right [droit]*, in order to clarify a question that tends to remain in the background when I myself refer to the process of grammatization, appropriating and significantly modifying a concept forged by Sylvain Auroux.

There are regimes, eras and epochs of *différance*, regimes falling within the regimes of individuation distinguished by Simondon, and eras and epochs opening up spatiotemporal localities within psychic and collective individuation. The latter is a premier diversity constitutive of the noodiversity that the universality institutionalized by the university (and which becomes an instrument of, firstly, theological power, then political power, and then economic power) vectorizes, starting from the Greek concept of truth – *alētheia* (which Schmitt inscribes into an irreducible pluriversity).

What it is first and foremost a matter of thinking care-fully about, therefore, in making (the) *différance*, is *différance* itself, precisely

insofar as it *différentiates itself* epokhally – and through a doubly epokhal redoubling. And it is here that questions of ‘code’ arise – that is, questions of *the fact and law of the trace*, inasmuch as it constitutes itself in *tekhne*.

Auroux’s fundamental proposition is that, in the process of grammatization, scriptural technique, as the discretization of what is grammatized, precedes the grammatical description of language and its theoretical consideration – which it makes possible and conditions (this is the overlooked background of the dialogue that Derrida⁵⁶⁸ entered into with Benveniste⁵⁶⁹ with respect to the relationship between grammar and the categories of thought in Aristotle).⁵⁷⁰

If, as I have proposed, the concept of grammatization can be extended to all operations that ‘discretize’ a continuous flow, then *digitalization* is a generalized grammatization occurring at phenomenal speed. Algorithmic operating procedures proliferate and change at a dizzying rate as a result of constant and generalized reticulation, teeming with feedback loops based on recursive functions, and, along with it, with what Yuk Hui calls ‘digital objects’.⁵⁷¹ These logical automatons trigger and control digital processes operating more quickly than lightning, because they are founded on recursive functions themselves operating at two thirds of the speed of light, which is also to say between two and four million times faster than the nerve impulses circulating within noetic bodies⁵⁷² (lightning itself propagating at one third of the speed of light).

The digital trace is one case of ‘tertiary retention’. The letter, which is another case, emerged from the process of grammatization that gave rise to the alphabet. ‘Literal’ tertiary retention constitutes the specific era of *différance* that opens the question of *logos* as such – and more precisely the question of what Derrida himself, commenting on Heidegger, presented as the question of the *as such* – and, beyond that, of monotheism and its eras, and where the question of *droit* is conceived as a *regime of truth* inasmuch as it firstly presented itself, for the Greeks, in apodictic geometry, thereby constituting *logos as such*, that is, as the capacity to constitute its objects as such.

Is digital tertiary retention capable of constituting the *différance* of another epoch of *logos*? If so, how do we *make this différence*?

I have always been perplexed by Derrida’s position, which excludes studying the specificity and *privilege* of literal tertiary retention. To say there is a privilege of the letter is not to say that literal tertiary retention is superior to other forms: it means that *each regime of tertiary retention is specific, and as such requires a privilege*, that is, a specific *law*, constituting a juridical regime and establishing a right. If we are to refer to a right to philosophy and to a co-constitution of

logos and *nomos* – from which philosophy arises two centuries later – and if we wish to confront digital tertiary retention as constituting the absence of epoch, *that is, the absence of law and right*, then it is a question of knowing:

- how *logos*, *nomos* and *philosophia* relate to the specificity of *literal* tertiary retention;
- how hypomnesic tertiary retention (whether literal, mechanical, analogical or digital) always bears within it the right and the duty of *making a différance* capable of performatively establishing a new juridical regime.

In the context of the Anthropocene, *such a right is a bifurcation through which we must bring about a neganthropological reversal of a highly entropic metastable situation*, which is to say, a situation on the verge of catastrophic instability.

21 Code and law: orienting oneself in *pansée*

In January 2000, Lawrence Lessig published an article in *Harvard Magazine* entitled ‘Code is Law’, which began with the following words:

Every age has its potential regulator [...]. Ours is the age of cyberspace. It, too, has a regulator [but] we don’t even see the regulation in this new space. [...] This regulator is code – the software and hardware that make cyberspace as it is. This code, or architecture, sets the terms on which life in cyberspace is experienced. [...] [U]nless we understand how cyberspace can embed, or displace, values from our constitutional tradition, we will lose control over those values. The law in cyberspace – code – will displace them.⁵⁷³

‘Code’, here, refers to the languages of computer programming, that is, digital tertiary retention. There are, however, other forms of coding, which are other forms of hypomnesic retention. Any positive right presupposes a code. All positive law is codified, distributed in modern law according to genre (civil code, penal code and so on), which raises the question of what exactly is codifiable,⁵⁷⁴ and where code is *never* self-sufficient: courts define procedures and processes for the *interpretation* of codes – where the relationships between code, law, right and justice are, however, irreducibly *conditioned by the specific tertiary retentions supporting them*.⁵⁷⁵ This is also what Poincaré

and Einstein made clear at the beginning of the twentieth century with respect to notions of space and time in mathematical physics.⁵⁷⁶

(Jacques Derrida and I published *Echographies of Television*⁵⁷⁷ after a lawsuit was brought against TF1 by Arnaud Montebourg, who accused the network of having wronged viewers by broadcasting a fake interview with Fidel Castro. The court dismissed the complaint on the grounds it was not competent to rule on questions of audiovisual montage – that is, on analogue tertiary retention.)

A *right to philosophy* must not fail to investigate the retentional root common to philosophy, apodictic geometry and law in the everyday sense – a common retentional root that provides them with the pre-coding and precodifying of its materials in positive law, politics and critique, through the courts and tribunals that interpret them *on the basis of a noetic capacity founded on this common root*, which, literally, provides to noesis a new *analytical* dimension. Investigating in this way the hypomnesic conditions of noesis insofar as it is itself the condition of *droit*, that is, of *judgment*, a *right to philosophy* cannot today ignore the *new différance* required by the coding effected by digital tertiary retention, and the consequent transformations of judgment.

This is also the question of the retentional root of all knowledge and of all rational interpretation of knowledge, as Husserl posited it in ‘The Origin of Geometry’. In 1953, when he was twenty-three years old, Derrida spoke ironically of this text whose author seemed to him rather laughable.⁵⁷⁸ Some years later he would completely reverse his position. But I remain doubtful that he ever *fully* accepted this reversal – which should be interpreted starting from the questions posed by Heidegger to which we will return via Rudolf Boehm.

The conceptualization of hypomnesic tertiary retentions – which are fruits of the grammatization that commenced with the painted caves of the Upper Palaeolithic – must pose anew the question of hermeneutics. And the latter should be conceived as the ‘assumption’ of the Olympian prescription (according to Protagoras) that – after *prometheia* and *epimetheia*, which form the time of the *pharmakon*, and do so as thanatology – Hermes must bring to mortals *the power, the knowledge and the duty to interpret them*, by granting them the feelings of *aidōs* and *dikē*, shame and justice.⁵⁷⁹ The objects of shame and justice are codified by tertiary retentions, *which with Hermes become hypomnesic*, Hermes being the god of writing.

Countless analysts and commentators are exploring what the capture of personal data means for law, and proposing changes that are just so many ‘patches on a wooden leg’: when someone points them towards the Moon, they see only the finger that’s pointing and not

the Moon itself. We must, of course, know *how* to look at the finger: the finger is precisely the object of ‘digital studies’ conceived as the organology and pharmacology of *digits*. But it is *not enough* to look at the finger: we must consider the direction that it indicates and how it grants vision, or, on the contrary, leaves us blind.⁵⁸⁰ And what is true for fingers is equally so for numbers.⁵⁸¹

The retentional mutation currently underway leads to the *disintegration of law* itself and as such, and this is what the internation must reject. This requires us to profoundly reconsider the inextricably retentional and institutional conditions of right and law in general, as well as the relations between the psychic apparatus, technical systems and social systems in general. This is what Alain Supiot has tried to develop (in general terms) in *Homo Juridicus*,⁵⁸² and it is what Thomas Berns and Antoinette Rouvroy have tried to do by adopting a somewhat more Foucauldian approach. This requires a return to Schmitt and Luhmann, and, prior to that, a rereading of Hobbes and Spinoza.

As for Lessig, he presents himself in his article as an *opponent of regulation* – either by the state or as a result of the control of networks by hegemonic market players. In other words, Lessig defends a libertarian perspective that in my view is both highly naïve (if, as I do, one credits him with good faith) and dangerous. The law, whether *droit* or *loi*, is *not* a code – at least in the sense understood by jurists, and the juridical understanding of this vocabulary should absolutely be defended.

But this is possible only on the condition that we raise the question of the *role of code in the history of law*, in its theory and in its practice – this role being *conditioned through and through by tertiary retention* – and where we must always also posit that justice is a *consistence*⁵⁸³ (as what, after Diotima, Socrates and Plato, we understand as an ideal-ity). Justice stands ‘beyond the law’ because it is the *compass* of the principle of subjective differentiation between fact and law that constitutes the stakes of ‘What is Orientation in Thinking?’⁵⁸⁴

As Peter Galison has shown with respect to Poincaré and Einstein,⁵⁸⁵ such an instrument of orientation, without which there would be no science, requires one or many sciences or one or many philosophies to prescribe therapeutic practices. This means that juridical science, too, has need for philosophy, redefined in its rights and duties in the Anthropocene epoch, and in view of the Neganthropocene, and for society, reconstituted by this same convocation, and through what, with Plaine Commune,⁵⁸⁶ we call contributory research – the very object of interscience in the internation.

And vice versa: philosophy has need both for law and for society.

22 Making the (ontological) *différance* as *Gelassenheit* (as *indifférance*)

There are all kinds of ways of thinking [*penser*] and these amount to so many ways of caring [*panser*] – *functionally* dependent on tertiary retentions, that is, *pharmaka*, of which the thinker takes care [*prend soin*], and *with which* he thinks care-fully [*panse*]. Such is noesis, which is obviously not limited to conceptual knowledge: it places that which emerges from the organs of exosomatization – tertiary retentions – into the service of a *différance* that is also a differentiation, which, as such, is *neganthropic*.

Every way of thinking/caring is inscribed onto a circuit formed by such exosomatic and thus pharmacological organs. As exosomatic organs appear, noesis, too, is transformed, de-functionalized and re-functionalized. Hypomnesic tertiary retentions, starting in the Upper Palaeolithic, set in train that history of functions that, over the course of the history of noesis, grants the noetic faculties their specific features as new possibilities of exosomatizing the life of the spirit – of exteriorizing it in the sense involved when Hegel does phenomenology.

It is here that Marx draws conclusions opposed to what with Engels he calls idealism, which he describes as the foundation of ideology, itself based on an inverted perspective (and causality) where spirit would be the origin of technics, whereas it is in technics, which Marx and Engels call the means of production of human existence, and which in the history of life amounts to the process of exosomatization, that the origin of spirit would lie.⁵⁸⁷ And it is this issue that lies behind Heidegger's resistance to materialism.

With hypomnesic tertiary retentions, exosomatic *différance* intensifies, which also means that it noetically differs and defers (spatially and temporally) by increasing noodiversity. This increase is reflected in the multiplication of neganthropic works, in the form of all manner of expressions and exteriorizations, constituting noodiversification as the accumulation and sedimentation (in the sense of 'The Origin of Geometry'⁵⁸⁸) of a potential for supplementary diversifications to be reactivated through the constitution of protentions, where these form more or less convergent or divergent horizons of expectation (for example, that of the *We* of geometers) – possibilities of divergence and convergence that are also the stakes of Spinoza's *Ethics* and *Political Treatise*.

These diversifications, however, are established on the basis of what presents itself in the *process* of transindividuation as *universionifications*, which constitute exosomatic ages, and on the basis of

exosomatic layers that are increasingly unified by hypomnesic retentions and through which common horizons of practice are metastabilized. Around these universifying hypomnesic retentions, powers form that cultivate forms of knowledge, which, over millennia, eventually become what we still today call the sciences – whose functions themselves evolve with the *biopolitical* evolution of these powers.⁵⁸⁹

In the civilizations where knowledge provides the criteria for decisions (that is, for artificial selections) on the basis of which psychic and collective individuation is accomplished, thereby forming the epochs and zones of noetic life, the sciences put increasingly complex hypomnesic *pharmaka* skilfully to work in the service of the formulation of prescriptions certified by communities of peers. These prescriptions set out the conditions in which it is or is not possible to produce new organs and stages of exosomatization, or new arrangements between exosomatic organs and psychosomatic organisms, whether existent or emergent – in so doing bringing them together [*faisant ainsi corps*] as social organizations.

Over centuries and millennia, however, and after having been the mark par excellence of the power founded on the pharaoh, the emperor or the *basileus*, the specificity of hypomnesic retentions and of those who master them becomes part of common consciousness. With the *polis*, the practice of these retentions becomes increasingly accessible to those who become citizens to the precise extent that they themselves cultivate hypomnesic practices. During the great transformations that will lead to the birth of capitalism, passing through money, printing and the mechanical tertiary retention that appears with industrial machinism, hypomnesic retention leads to the grammatization of somatic motility and thus affects so-called ‘manual’ knowledge.

The Anthropocene is established on the basis of this submission of work-knowledge [*savoir faire*] to grammatization, which generates proletarianization, then the submission of life-knowledge [*savoir vivre*], through the behavioural control made possible by analogue tertiary retention. Hypomnesic retentions are thus themselves profoundly transformed, in particular with the appearance of devices that mean there is no longer any need for the technical and hypomnesic individuation of the psychic individuals that are psychosomatic organisms, nor for the collective individuation of social organizations and of the social systems of which they are composed. Now that all the functions that are in one way or another involved in the formation of noetic circuits have been integrated into *automated hypomnesic devices* operating with digital tertiary retention, psychic and collective individuals find themselves short-circuited, that is, proletarianized.

What we are here calling *panser* means, in *Being and Time*, making (the) *différance* by taking care of being – that is, by distinguishing being in beings. Heidegger (who did not himself conceive this difference as a *différance*) begins by quoting the passage of the *Sophist* where Plato has Socrates say that we have *forgotten* the meaning of being, a situation that leaves philosophers at an uncomfortable impasse [*embarras*], that is, in an *aporia*. Hence reactivating what he would later call the history of being, by thinking being and its history as the ‘*pansée*’ of being (*Sorge*, care) on the basis of an ‘interpretation of *time* as the possible horizon for any understanding whatsoever of being’,⁵⁹⁰ Heidegger set up the thanatological question as the horizon of any authentic (*eigentlich*) temporality, which could be given only from the facticity of a there, *Da*.

The *question* of being can *put Dasein into question*, and, in so doing, summon it to take care of the difference between being and beings, and hence to itself question, *only* starting from a here (*Da*) and a now (today). To *panser* is, for Heidegger, to question (the meaning of being, and as the difference between being and beings). The question is historical (*geschichtlich*) in that it can present itself only through the horizons, each time specific, of a being-in-the-world that requires both the structure of ‘reference’,⁵⁹¹ that is, a cardinality immanent to the world of *Dasein* who questions here and now, and a datability⁵⁹² that inscribes this now, after the past that has ‘always already preceded’ it, only insofar as this datability establishes a tertiary retentional order that defines an era, as a temporal horizon of reference, encompassing *Weltgeschichtlichkeit*.

This means that:

- everything described in the existential analytic of *Dasein* is inscribed within a primordial retentional facticity, where what is at stake is clearly a pharmacology, and where it is only within such a pharmacology that there can arise the necessity of *making (the) différence* – between being and beings;
- this anamnesis of the ‘question of being’ in *Being and Time* does not succeed in going back to the question of hypomnesis as it was introduced in the *Phaedrus* – where it was introduced metaphysically, that is, by denying the irreducibly pharmacological character of the *pharmakon*, which leads modern philosophy in general and Descartes in particular to a discourse of mastery that makes anthropocenic exosomatization possible, so to speak, opening the age of noesis conceived as calculability.⁵⁹³

For Heidegger, to think care-fully is to think the ontological difference of being and being, that is, to pose the question of the *as such* through which (question) difference is *made*. For us, coming *after* Derrida, this means to think care-fully about *différance*, and to *make* it, and to do so in *supplement(s)*, and not in some originary element that would be *eigentlich* temporality. But ‘to make it in supplements’ is to make it *according to the history no longer of being but of exosomatization*, and to do so as artificial selection *within différence* and *as différence* insofar as it must *decide*.

In thinking care-fully about the *as such*, it becomes a matter of thinking care-fully about *pharmaka* as such: it is to think ‘care’ [*soin*] on the basis of the care-ful treatments [*pansements*] required by the noetic, that is, exosomatic, form of life – inasmuch as it cannot be cured of exosomatization, *except to disappear* as the faculty of neganthropically making (the) *différance*.

Starting with *Phaedrus*, and echoing *Protagoras*, *pharmaka* as such, and, in the first place, the *pharmakon* of knowledge and power that is writing, are that of which philosophy intends to take care by denying their irreducible and primordial toxicity. Here, ‘primordial’ means: preceding as its past the dialectic of analysis and synthesis in which, according to *Phaedrus*, ontology consists. And ‘as its past’ means: that hypomnesic condition whose artificial, factual character no anamnesis can reduce. What cannot be reduced, in other words, is its exosomatic condition, that is, its *technical* condition.

The *as such*, which thus consists in taking care of *pharmaka* as such, and, in the first place, of the *pharmakon* of knowledge and power that is writing, by the same token consists, from the very beginning of the ‘history of being’, in *effacing* the question, in *forgetting* the *pharmakon* as question, starting from Plato. It consists in turning it into the *question of being*, which, precisely through this very fact, becomes the *forgetting of being* – the forgetting of being insofar as it is always already there-being, in the *locality* of a *Lichtung* opened up by the facticity of what Peter Sloterdijk believes we should call ‘anthropotechnics’.

What makes the consideration of the *as such* of being *possible* is literal hypomnesic tertiary retention. It is also what makes the differentiation of noesis into faculties (in particular those of knowing, desiring and judging⁵⁹⁴) and functions possible. In the course of exosomatization, these are functionally differentiated, and, in so doing, they constitute epochs of noesis *and of the de-noetization that is its perpetual accompaniment*.

At present, today, we must *reconsider hypomnesic tertiary retention as such*, from its prehistoric emergence up until its current forms,

which constitute thoroughly computational capitalism as Absolute Non-Knowledge, that is, as anthropic danger (*Gefahr*), concretized by and as what Heidegger called *Gestell*. But we must do so in order to *detect the possibility and the necessity of making (the) new noetic différence* required by this new stage of exosomatization, and in order, in so doing, to trans-form the chaotic ‘shift’ into an unexpected, unhoped-for [*inespérée*] neganthropological opportunity.

This unhoped-for neganthropological possibility, which is ‘that which saves’ without redemption, is that bifurcation which Heidegger *could not* care-fully think (under the name of *Ereignis*) because he saw calculation and meditation as an *opposition*. In so doing, he remained, as the custodian of this opposition, the last great representative of what he himself called metaphysics, considering it in terms of a history of forgetting, but in doing so being led to the discourse of *Gelassenheit*, where, in Meßkirch, his probably ‘visceral’ (that is, unthinking) anti-Semitism manifested itself *as such*, and *as his unthought as such*.

I have elsewhere tried to show that all this amounts to a serpentine affair,⁵⁹⁵ that is, a matter of the status of the *pharmakon* (of which the snake is *everywhere* the symbol, even among the Inuit⁵⁹⁶) in the history of nihilism, and over the course of monotheism’s (exosomatic) trans-formation into absolutely computational capitalism. Omnipresent in Greek mythology as in the sacred texts of monotheism and in everything discovered by positive anthropology, the question of the snake or the serpent is what escapes everyone, including Freud, with the exception of he who, in 1923 in Kreuzlingen, while living under the terror of anti-Semitic persecution, delivered ‘A Lecture on Serpent Ritual’⁵⁹⁷ – while Binswanger, treating and caring for Warburg, reconsidered and care-fully thought about the place of the dream in psychic life, that is, in what we are here calling noesis.

23 Making the (organological and pharmacological) *différance*

To orient oneself in *pansée* is possible thanks to the ‘subjective principle of differentiation’ inasmuch as the latter is conditioned by tertiary retention, and to *panser* is to distinguish law from fact, *in facts*, and in *making (the) différence* by making the *performative* selection that tertiary retention enables. To make this *différance* is to individuate. And the possibility of individuating is what every law and right must guarantee to individuals – whether psychic individuals, who are called ‘subjects’, or collective individuals, which constitute ‘peoples’.

Here the *exosomatic, organological and pharmacological question of politics* imposes itself as that which poses to each psychic

individual – posited thereby as a citizen, that is, as a regime of psychic individuation guaranteed by a law and right constituting a regime of collective individuation – the question of the effectiveness of these forms of individuation inasmuch as they make possible public and private social organizations through the metastabilization of agreement interpretable under conditions spelled out by law. These conditions themselves require the establishment of criteria formed by knowledge, and, in particular, forms of knowledge subject to the critique of peers – a possibility ruined by generalized proletarianization.

The literal (lettered) codification of law that makes political individuation possible, between the seventh and sixth centuries BCE, requires the cultivation of an ability to read in everyone and by everyone – and requires related institutions of education, training, certification, publication and so on, all of which continue to evolve throughout the course of Western history, while other forms of juridical collective individuation develop in parallel in other civilizations, along with other, more or less comparable institutions, on the basis of other forms of written, if not alphabetical, retentions.

In the current state of fact, ‘code’, as digital tertiary retention, as that on which Lawrence Lessig reflects, requires *none* of that. On the contrary, it allows all of these things to be *bypassed and short-circuited* – and, with them, law and right themselves, that is, *noetic différance*. In so doing, it also allows a fable to be propagated, according to which:

- 1 a spontaneous noetic capacity would be ‘hard-wired’ in the brain;
- 2 this capacity would itself be reducible to calculation.

Institutions of certification, publication, education, training and so on constitute what I call retentional systems,⁵⁹⁸ that is, the apparatus, on the one hand, of hypomnesic exosomatic exteriorization, and, on the other hand, of the *cerebral, psychic and social interiorization* of code that has been exteriorized in and by these systems. Only in *this* way does *code* become *law*, that is, by psychically and socially *incorporating* the symbolic, which becomes embodied psycho-somatically but also as part of a social cohesion [*faire-corps*], and which *thereby* constitutes knowledge: code must *become knowledge* in order to *be* a law or right, which must in turn be that of a social body. Such a becoming is the *différance* of an *automatic indifférance* of code (of its repetition to the letter of the law, but without *spirit*, which is to say, without the power to neganthropically do work).

I have just referred to a *becoming*-knowledge of code, a *devenir-savoir*, but the word ‘*devenir*’ is misleading here – given that to *become is to become entropically*, so to speak (after Carnot, Clausius and Boltzmann), and given that, within entropy, Schrödinger *distinguished* life – that is, *différance in general* – as negative entropy, or negentropy.

Emerging as negentropy from an entropic ground, *différance* – as the *process of the trace and the traced* that, in *Of Grammatology*, Derrida presents as life – when it is exosomatized, remains alive, remains vital *différance*. Yet, even so, through exosomatic organogenesis it *inscribes* and configures *bifurcations* in becoming through which *localities* are established that metastabilize ways of enduring other than those of living things, and through which the feelings of being and existing come to be established. Such bifurcations emerge from becoming [*devenir*] as *futures* [*avenirs*], that is, as differences (with an ‘e’) that are not reducible to the laws of becoming, which are thus *différences of becoming*, because they counteract it by differing and deferring [*différant*] the ‘law of becoming’ that is entropy – ephemeral *différences* with respect to what henceforth constitutes the rule of the ‘arrow of time’, and a new age of melancholy.

What *trans-forms* entropic *inevitability* [*fatalité*] into negentropic *opportunity* [*possibilité*] is law and right [*droit*] – and as such it is connected to the being-for-death described by Heidegger in *Being and Time* (which should be reinterpreted in relation to both Freud⁵⁹⁹ and Schrödinger⁶⁰⁰). In such a conception of law, interpretation is a transformation – and law turns back to Marx, who began as a law student in the school of Friedrich Carl von Savigny.⁶⁰¹ It is as this power and knowledge of *neganthropic transformation* that the right to philosophy is a duty of philosophy, which must be redefined for the Anthropocene-become-disruptive – that is, *accomplishing* nihilism as absence of epoch.

In the Anthropocene, which is also and firstly a question of entropy, the history of the supplement that is the reality of *différance* must be reconsidered and concretely expressed in terms of the new perspective that begins to take shape with Sadi Carnot and passes through the cosmology of Hubble and the biophysics of Schrödinger – and it must constitute a critique both of cognitivism and neurocentrism. Understood with Canguilhem, the history of life is the process of a negentropic *différance* that becomes neganthropic with the emergence of lithic tertiary retention, intensifying its noodiversification with hypomnesic tertiary retention, and eventually leading to the Anthropocene with the autonomization of the means of calculation in the service of *negotium*, and depending on the function of reason

to make the *différance* capable of reinventing an ‘art of life’ – in Whitehead’s sense – with the *pharmakon* that has emerged from this new stage of exosomatization.

The history of the supplement constitutes the history of a code, which, as we read in *Of Grammatology*, is firstly genetic, but which with tertiary retention is no longer organic but organological, which is also to say, pharmacological: where we must *make (a) différence that is no longer given*, a vital process of artificial selection that is the function of reason, posited in other terms by Nicholas Georgescu-Roegen in order to redefine economics as what, with exosomatization, replaces biology as that which governs the relationships between organs and organizations so as to maintain entropy at low levels.⁶⁰²

Digital tertiary retention and the coding referred to by Lessig lead to high performance computing, as a way of treating ‘big data’, and to ‘data science’, and this is what allows Chris Anderson to claim there is no longer any need for theory. But this so-called ‘correlationist’ treatment of digital data performing at two-thirds of the speed of light, between two and four million times quicker than the nerve impulses that produce this data, brings with it an *overwhelmingly* entropic becoming in which the data economy, increasingly self-referential due to the performative effects induced by feedback loops and algorithmic recursive functions, tends to become a closed system whose effect can only be precipitate the ‘shift’ evoked by the signatories of the article in *Nature*.

In January 2000, Lessig alerted internauts (those who constitute in potential what Mauss called the *internation*) to the fact that ‘the code is not fixed’:

The architecture of cyberspace is not given. [...] [T]he code can change. Other architectures can be layered onto the basic TCP/IP protocols, and these other architectures can make behavior on the Net fundamentally regulable. Commerce is building these other architectures.⁶⁰³

In June 2015, this architecture has indeed changed, and in the very direction anticipated and denounced by Lessig. It *can* and *must* change *in the opposite direction*, and become a hermeneutic web, that is, a publication space for digital tertiary retention dedicated to the formation of a new noetic and political community founded on the categorical imperative of reversing the overwhelmingly entropic process borne by the current computational system, a system that exclusively serves a capitalism itself becoming *purely, simply, exclusively and therefore absolutely* computational – entropic *as such*, that is, *inherently self-destructive*.

Such a reversal consists in particular in reinventing interpretative tools: IRI is developing a forerunner of such tools in the form of a platform for sharing and annotating lecture notes.

It is not a question of *resisting*, as Derrida, Lyotard and Deleuze all end up saying, but of *inventing*. The theoretical organology to which the study of the history of *différance* and of the supplements that generate noodiversity leads can be constituted only on the basis of organological *practices* that can and must themselves generate new exosomatic proposals, that is, new histories of the supplement – and in order to make (the) *différance* through a bifurcation opening up a new era of noesis: the Neganthropocene.

Simondon allows an understanding of *différance* that goes beyond Derrida, as allagmatic practice,⁶⁰⁴ and *vice versa*: *différance* is also what, driving the processes of vital, psychosocial and techno-logical individuation that Simondon tried to think, enables care-ful thinking about the future [*panser l'avenir*] of individuation and disindividuation (of the *pharmakon*) beyond Simondon's residual humanism.

Today, the defence of neganthropic law and right against anthropic facts – wholly against them, right up against them [*tout contre*] – has the right and the duty to modify those digital tertiary retentions that are the codes and platforms that put them to work, in the service of a new age of noesis in general, as the exosomatic principle of the *différentiation* of law within facts, that is, as artificial selection in the service of those neganthropic works needed by the Neganthropocene.

24 The *différential* function of reason and its instruments

We should understand and transform the *protentional negativity* of our fellow men and women – to which Florian bears witness – through the quasi-causal modification of facts (the retentional industry) into right and law (as the sharing of protentions), where the heart of the *problem* (and not just the question) is to give a reasoned account of this *quasi-causality* through which a (de)fault becomes what is necessary – which we must think care-fully with Derrida and Deleuze, which is also to say, with Nietzsche and (right up) against [*tout contre*] Heidegger.

Reason is *différential*: it is a regime of *différance*, and it stems from a noetic power that is neganthropological, through which its function is constituted. In other words, the necessary default is the organological and pharmacological regime of neganthropy as noetic *différance*.

Having become disruptive in the sense described in *Dans la disruption*, this exosomatic fact is what leads to the situation described by Anderson: it is the fact of the 'end of theory', and it is a passage

to the limit of the doubly epokhal redoubling as *loss of reason*, that is, of its function, which is to provide criteria. Law would then be a reconstruction of knowledge that starts from what presents itself initially as its destruction, which, today, is its being put into question by Absolute Non-Knowledge and by the information industry – within which information is conceived as completely calculable.⁶⁰⁵

This challenge, this being put into question, always proceeds from what Ivar Ekeland describes as an instrumental expansion – that is, an organological and pharmacological expansion – that opens possibilities for bifurcations in the system that all knowledge constitutes, created through the emergence of observable improbabilities:

We are, today, in a position identical to those who peered into the Leeuwenhoek microscope at the end of the eighteenth century. Place a drop of water in a microscope and you will see many things of which you hitherto had no idea. Use your computer, and you will realize calculations that you could never have accomplished with paper and pencil, and you too will see that there are many things of which you had no idea.⁶⁰⁶

What Ivar Ekeland describes here does not just concern conceptual knowledge: it also affects work-knowledge and life-knowledge, knowledge of how to live and do, which means that it affects the affects.

This *affection* now occurs at the speed that bit-strings circulate in fibre optic cables, between two and four million times quicker, as we said, than the impulses that course through our nervous system. We must, therefore, turn to the neurosciences: by using cerebral imaging, Maryanne Wolf has shown that the real issue here is that the cerebral organ is disorganized and reorganized as a result of interiorizing, *via the mediation involved in the practice of hypomnesic tertiary retentions*, the circuits of transindividuation that are forms of knowledge – and, through them, social solidarities, but also the divisions, disputes and conflicts of interpretation that underlie them (as the super-saturated potentials of the preindividual funds in which they consist).

This view is diametrically opposed to that of Catherine Malabou:

I consider it incontestable, from now on, that the structures and operations of the brain, far from being the glimmerless organic support of our light, are the only *reason* for processes of cognition and thought; and that there is absolutely no justification for separating mind and brain.⁶⁰⁷

Once upon a time, we had Gall's phrenology, in which 'spirit is a bone'.⁶⁰⁸ Today we have a soft phrenology where spirit – blithely confounded with thought, itself reduced to 'cognition' – becomes gelatinous, while reason, mentioned in passing, becomes a synonym for causality, consisting of this gelatine traversed by electro-chemical currents, in which Catherine Malabou sees the proof of her thesis with respect to the mind as plasticity. Is it still from such a perspective that we must understand the question of the 'epigenesis of reason'?⁶⁰⁹

Rather, what is truly urgent is to reread Kant with Freud (swept away by Malabou in the name of gelatine) and Freud with *différance*, where *différance* would no longer be 'quasi-transcendental' but quasi-causal, which is also to say, organological – the schematism being the site of this organological condition. It is this that Ekeland's account makes clear.

This in turn requires, not only that Derrida be read with Simondon and Deleuze, but that all these French authors be read alongside *The German Ideology* of Marx and Engels.⁶¹⁰

25 Sculpture, gardening, culture:

impromptu remarks on the noetic cerebral organ

As Henri Bergson had the audacity to suggest when, in opposing Théodule Ribot, he raised this issue, thinking is *not* contained within the brain.⁶¹¹ We ourselves say, after Bergson – and beyond what he himself said⁶¹² – that it lies *between neganthropological beings such that their brains have the characteristic of being cultivated: cultivated like gardens, and not simply 'sculpted'*.

This culture is made possible by instruments (tertiary retentions), which, by constantly disorganizing and reorganizing noetic cerebral organs within a noetic loop that is a spiral or a fractal wherein intergenerational and transgenerational circuits of transindividuation form, succeed in fostering *neganthropic anamneses that always remain yet to come*, and therefore *invisible* (invisible to cerebral imaging and to de-noetized exosomatic beings, just as they are to correlationist algorithms): these are *consistences*,⁶¹³ which neither exist nor subsist, remaining always to come – in *différance*.

To think care-fully [*panser*] is to complete this loop by accomplishing the neganthropological fate in which noesis *consists*: its *différance*. Contrary to what Tarde⁶¹⁴ suggests, what lies between brains as cultivated organs in the service of reason as neganthropic function is not a void: it is an infinite organological field (in the sense in which Deleuze and Guattari use this adjective, 'infinite', in *What is*

*Philosophy?*⁶¹⁵ – though they did not themselves clearly see the organological dimension it contains).

In this field – which we should also understand in Simondon's sense, that is, in the sense of the Theory of Form, and of electromagnetism – *unfinished* organic organs are cultivated, which are thereby inherently and structurally *heteronomous* (because non-self-sufficient: the hand of the pianist, the foot of the footballer, the ear of the student). They are cultured through operations conducted with the *noetic instruments* emerging from this endless dynamic loop, polarized by anthropic forces and neganthropic counter-forces, which consist both in tertiary retentions, whether hypomnesic or otherwise (tools, instruments, works, cities, networks and so on), *and in the circuits of transindividuation attached to them*. All this constitutes what Simondon called the transindividual, and it is transmitted by the educational processes of all kinds that are the quotidian lot of what, therefore, is called *ex-perience*.

Noetic cerebral organs, being organo-logical, exo-somatize the endosomatic organic organs that they inherit in coming into the world: they trans-ductively 'organologize' them, so that the endosomatic organ becomes the organ of a socially exo-somatized cohesion [*faire-corps*], inscribed on circuits constituted by the symbol and the fetish as well as the object, tool, instrument, machine, code and institution. Passing through these circuits, they are inscribed into the history of knowledge – where knowledge is always a knowledge taking care of the *pharmakon* that is always the exosomatic reality, failing which it *un-does* [*dé-fait*] this cohesion [*faire-corps*], a disintegration that haunts all philosophy and beyond (from Socrates to Durkheim, via Hobbes and Spinoza).

In creating social cohesion [*faire-corps social*], the exosomatic body, individuating itself by knowing, produces bifurcations in knowledge that dis-organize it in order to re-organize it anew. It does so by participating, deliberately or otherwise, in the generation of new tertiary retentional organizations, and, through that, in giving rise to new collective protentions. This quasi-circularity, considered more closely, is a constant looping back, the spirals of which, constituting moments of intermittence, that is, oscillations, form a fractal spiral because they are encased, along with other spirals, within a larger spiral that is also their *différance*, in a sense that passes through Simondon and beyond Derrida, itself encasing more local spirals: intermittences are also relations of scale between orders of magnitude, that is, between localities of scale.

The noetic brain is not *just* organic: it is organological, which means infinitely in *différance*. But it is because this is so that, inversely, it is

continuously being proletarianized and *finitized*, in ways that are ever more noticeable to those who, as mortals, live in this strange way: this technical form of life (that Canguilhem described as its own *pathology*, that is, as its own health – as its *normativity*) consists primarily in mortifying itself, always and forever. But, in so doing, it leaves traces that will be reactivated inasmuch as they constitute a neganthropological potential.

This is what Nietzsche never managed to think with the notion of ‘will to power’, even though it amounts to this very question.

What is called *panser*, therefore, sets out like a fall. Yet this fall raises – an elevation that is always also a falling back, a relapse.

J’attends en m’abîmant que mon ennui s’élève. (I await, ruining myself, the raising of my ennui.)⁶¹⁶

I write this as a student [*élève*] of Derrida: he raised me, as does any philosopher, so another might come. A philosopher is one who raises [*élèveur*, breeder]. Such ‘raising’, however, is not what Peter Sloterdijk ironically imagines can be found in Plato’s *Republic* – thereby dissolving all these questions and problems (which all pass through the question of *politeia*) in his customary caustic cleverness.

Derrida raised me, and I entered his thinking through the generous thought of another *élèveur*, Gérard Granel. These confidences are addressed to Catherine Malabou, to whom – taking up an old, long-interrupted dialogue of the deaf,⁶¹⁷ which I am unilaterally resuming, beyond the contingency of the individual and collective contemporary miseries typical of de-noetization – I now say: the brain is the organ of the *disorganization* that results from its always untimely expression, projected away from it, through which what is called *panser* always escapes from those who still try to think care-fully within the experience of the *already* that presents itself in fact (and in its effects) only as the *not-yet* (thinking here both of Heidegger and Proust – and thus of *Proust and the Squid*⁶¹⁸).

Between these *alwayeses*, *alreadies*, *stills* and *not yet*s is woven the *exigency*, at once *intragenerational*, *intergenerational* and *trans-generational*, of *faith*, without which there can be no *alētheia*, or *dikē*, or noesis.

Let us now find support for these questions by reading ‘Pensée et technique’, an article by Rudolf Boehm published in 1960⁶¹⁹ – that is, *before* Heidegger published his texts on the *Kehre* – after which we will attempt a kind of conclusion.

26 The history of the future: technics, ontological difference and knowledge

In *What Makes Life Worth Living: On Pharmacology*, I recalled that:

What is called ‘man’ is apprehended by Heidegger, at the beginning of *Being and Time*, as *Dasein*. And to this being-there [Heidegger] accords [the] *privilege* [...] of posing questions.⁶²⁰

It is indeed written in *Being and Time* that ‘this being which we ourselves in each case are, and which has in its being and among other things the possibility of posing questions, will be designated with the name *Dasein*’.⁶²¹ The quotation from *On Pharmacology* continues:

Leaving Heideggerian thought to one side, I propose that the question of the question is that of who, in posing questions, *creates* long circuits and through that *adopts* that which constantly places into question, namely, the *pharmakon*.⁶²²

The *circuit of adoption* always generates a new *pharmakon* (which could be a neologism or a molecule or an instrument), which in turn always ‘wants’ to be adopted, and which itself always launches another putting into question. Such is the basis of what Simondon called ‘de-phasing’ [*déphasage*], shifting phase.⁶²³

When I was writing *On Pharmacology*, I had not yet read Boehm’s ‘Pensée et technique’. Reading this article from 1960 brings new elements to the reading of Heidegger, in particular as concerns the meaning of *tekhne* – and feeds into my own perspective as argued via the question of the doubly epokhal redoubling, which is the system of ‘escapement’ (in the horological sense of the word, but also in the sense of the forgetting of being) that *keeps the measured and excessive beat* [*bat la mesure et la démesure*] of what it is no longer sufficient to call the ‘history of being’: it is a matter of the history of the future.⁶²⁴

Each time there occurs – as an echo of a stage of the doubly epokhal redoubling – a challenge, a putting-in-question, what is most difficult and most urgent is to describe this questioning, that is, to discern in what way it is unheard-of and unprecedented, which means, *radically improbable* because *incomparable* and therefore *incalculable*, and, in this sense, *impossible*, which makes *this* today a *today as never before*. To make this impossible into a possibility, *Möglichkeit*, in the sense this is used in ‘Letter on Humanism’,⁶²⁵ is what is at stake in *Entschlossenheit*,⁶²⁶ as well as with quasi-causality, and it falls within a logic and a history of that supplement which is the trace of *différance*.

Such a description is the *formulation of the order and disorder of questions* engendered by the being put in question(s) – a question is never the bearer of *just one* question – resulting from what Heidegger called ‘setting to work’ (*in Werk setzen*), which is also to say, putting to work, working, if not machining [*usinage*].⁶²⁷

The question of the *order* of questions, which forms the foundation of the method that emerges from *Discourse on Method*, is also the issue in what Heidegger called ontological difference. It is with this question that we must *begin*, even if it is *in an après-coup*. Such a question of order cannot remain unaffected by the *disorder* that, since Clausius, constitutes the direction of the universe in a way that seems to stifle in advance any horizon of promise, and which is or *becomes*⁶²⁸ through this fact the *first* question, and, in a way, the *limit* between the order and disorder of these questions. We will see, however, that a question of order and disorder⁶²⁹ is present in *An Introduction to Metaphysics*, and is so as violence, *Gewalt*.

Différance is *precisely* this question of the deferral and differentiation of disorder by order, and as the violence of a power. This *différance* must today be understood and *made* as such: ‘today’, in our time, which is to say in that moment when disruption gives rise, in what we must understand as the Entropocene, to a disorder that attempts to impose a new order, but an order that remains indifférent because it is founded on extreme proletarianization. It is *this* question that we must turn into a *problem*, as Deleuze says, which means that we must think care-fully about it by questioning the *concept* of *différance* (its knowledge) and the *power* of *différance* on the basis of the economy and dis-economy (the pharmacology) of anthropy and neganthropy: such is the program of a neganthropology.

A question, in the sense of being what constitutes the historial privilege of *Dasein* (that is, the exosomatic privilege – a privilege that is therefore a problem and not just a question), is never ordinary. It is always *extra-ordinary* (in *Being and Time* this is the each-time singular question – in any epoch of the ‘history of being’ – of ontological difference). And this is what is said, by antithesis, in the last strophe of the chorus song in *Antigone*. What is extra-ordinary is the ‘ontological difference’ that arises out of the ordinary, that is, from what *Being and Time* calls the ontic.

But the question that falls to *us*, that falls *due* for us, and to which Florian bears witness, is not just an extra-ordinary question, not just ontological in the Heideggerian sense: it is the question of the *Ereignis*, which in his later writings Heidegger related to *Gestell*, as that which *puts in question the very possibility of putting in question*, and as the ‘co-proprietation’ of the human and technics-become-*Gestell*.

The questions of *Gestell* and *Bestand* appear in 1949, no doubt as *the turn par excellence*.

In 1962, Heidegger pronounced his final word on ‘what has been called “Being” up to now’,⁶³⁰ and on that which ‘there is’, on the ‘it gives’ (*es gibt*).

For us, in the twenty-first century, the ‘task of thinking’ is to undertake a return to the question of *tekhnē*, which in 1960 Boehm showed to be the first, last and constant issue of thinking throughout Heidegger’s work, where, precisely, knowing is a work, that is, the crafting and fashioning of a difference (with an ‘e’) we must *make*, which Heidegger called ontological and which with Derrida became the *différance* of the trace.

In the order, disorder and chaos of a putting-in-question that clearly *upsets everything [nous bouleverse] as never before*, the first question that imposes itself upon us as we are gathered here in, behind, before or after what we call philosophy, is not a putting in question of the ‘right to philosophy’. The first question that imposes itself upon us today is the putting in question of the right to *knowledge*, and, by the same token, not the duty of knowledge but the duty to knowledge: the duty that befalls all of us to *guarantee the right and the duty to access knowledge* and to access it ourselves – and thus, the duty to *demand to be able to know*, organologically, pharmacologically and *in the inter-nation that would thereby be constituted*.

In ‘Pensée et technique’, Boehm analyses and compares two texts: on the one hand, ‘On the Essence of Ground’, in which Heidegger establishes that transcendence constitutes the horizon of facticity as the ‘being-in’ of Dasein, and, on the other hand, *An Introduction to Metaphysics*, in which it seems that this transcendence is fundamentally constituted by the technicity of Dasein. *Tekhnē*, here, is a synonym of knowledge, and so, on this subject, Heidegger modifies his interpretation of Plato. Boehm writes:

If our claim about the close relationship between the idea of ‘transcendence’ (in ‘On the Essence of Ground’) and *tekhnē* (in the *Introduction*) is true, then it follows that one and the same idea is referred, in Heidegger, initially to Plato, whereas, in the later instance, Platonic-Aristotelian philosophy is on the contrary characterized by the loss of this idea and of the knowledge of originary *tekhnē*.⁶³¹

In *An Introduction to Metaphysics*, this relationship between *tekhnē* and being – which is then also called *dikē*, and is so insofar as being is power, *Walten* – takes the form of a *conflict* between being and Dasein as a technician who knows only by *working, operating*, and where

tekhne seems indeed to constitute a *putting-in-question of being by a privileged being itself put in question*, while being reveals itself to be *dike* (which, we read in *Protagoras*, is brought to mortals by Hermes):

That the being of man is *tekhne* means that he is violent.
That man is violent means that his being is *tekhne*. What,
then, is the meaning of this word?⁶³²

The violent is the *δεινον*, that which is dreadful, *δεινοτατον*. Boehm here quotes *An Introduction to Metaphysics* on a decisive point:

Tekhnē means neither art nor skill, and it means nothing like technology in the modern sense. We translate *tekhne* as ‘knowing’. But this requires explication. Knowing here does not mean the result of mere observations about something present at hand that was formerly unfamiliar. Such items of information are always just accessory, even if they are indispensable to knowing. Knowing, in the genuine sense of *tekhne*, means initially and constantly looking out beyond [*Hinaussehen*] everything subsistent. This transcendence...⁶³³

And Boehm specifies that ‘instead of *Transcendenz*, Heidegger here uses *Hinaussein*’, in the sense that an object is also called transcendent that is ‘outside myself’ (Gilbert Kahn translates *Hinaussein* by ‘*être-au-dela*’).⁶³⁴

This transcendence *sets to work* in a preliminary way, and in different ways and on different paths and in different domains, that which alone gives to what subsists its relative law, its possible determination and thus its limit. To know is to know how to *put being to work* in the form of beings.⁶³⁵

In the absence of epoch, as the fulfilment of nihilism now known as the Anthropocene, and *after this violence*, it seems that this setting to work, as transcendence in the sense of *Hinaussein*, is the process of exosomatization qua artificial selection by noetic dreams that ‘realize’ what Heidegger called the ontological difference, but which after Derrida we should call *différance*. This *différance*, however, must be understood as *a question of entropy, and of the deferral that differentiates it and spaces it* (a question that Derrida did not take up), and it must be specified as noetic (and preceded by vital *différance*), and hence as always engendering *pharmaka*, which is also to say nightmares: it ‘is’ *that which there is qua Gestell*.

Hence the Greeks called art and artworks *tekhne* in a privileged sense, because art is what most immediately brings being – that is, the appearing that stands there in itself – into being (in the work).⁶³⁶

Being, here, is *dike*: *dike* expresses being in its conflict with *tekhne*, a conflict where, however, being appears via the beings that *tekhne* constitutes.

This *deinon* is, according to Heidegger, twofold: the uncanny is, on the one hand, that violence (*Gewalttatigkeit*) which profoundly characterizes the very existence of the human being and which properly speaking constitutes its essence; and, on the other hand, the still more powerful overwhelmingness (*das Überwältigende*) of being, which, at the same time, provokes and breaks the violent ‘reaction’ against it and that is the being of man.⁶³⁷

The genesis of being and of its difference, so to speak, is this conflict between two powers and two violences. In this conflict, being presents itself to the privileged being that is Dasein as *dike*:

The reign of this super-eminence of being and its disturbing uncanniness is expressed, according to Heidegger, in the Greek word *dike*; that in which the violence that pervades the existence of man consists can be understood by reflecting on the original meaning of the word *tekhne*.⁶³⁸

Here, Boehm again quotes Heidegger:

Thus, *deinon* as the overwhelming [that is, the powerful] (*dike*) and *deinon* as the violence-doing (*tekhne*) confront each other. [...] *Tekhnē* breaks out against *dike*, which, for its part, as fittingness (*Fug*), has all *tekhne* at its disposal.⁶³⁹

Hence:

It [this confrontation] is only insofar as the uncanniest, human being, happens – insofar as humanity essentially unfolds as history.⁶⁴⁰

What is at stake in this conflict – which Heidegger described as the history of being, and which we are calling noetic *différance* insofar as it is neganthropic within the violence of that exosomatization by which ‘human being, insofar as it exists’, is dreadful and violent, in the confrontation with all being, and thus with itself – is the doubly epokhal redoubling inasmuch as noesis can reconstitute a *peaceful*

possibility for *dikē* that can only ever be temporary, and within which conflicts simmer. These conflicts, when they generate knowledge, can be both polemic and pacific: this is what the ancient Greeks knew as the experience of *logos* – and it is what we learn from Heraclitus.⁶⁴¹

27 Knowledge, capital and the Anthropocene: capital as noetic *indifférance* and the violence of power today

Knowledge (of being) is *tekhne*: it is *tekhne* that *puts* us in question – making us *journey* towards knowledge, which it, nevertheless, has always already put into question *anew*.

For if *tekhne* is knowledge, it is also and always what *obliterates* knowledge, as well as the *right* to know, and hence the *duty* to know. And this is so because, as Marx and Engels showed in 1845–46,⁶⁴² *tekhne* as knowledge is also the power to exercise domination through an exteriorization without return, that is, without re-interiorization – and therefore *without noetic différence*: in a *noetic indifférance* that is also a *fiduciary*, that is, *calculable, différence*, which is called *capital*.⁶⁴³

Such is the paradox of knowledge that remains only *exteriorized* knowledge, and which thereby *becomes proletarianizable*. It is Socrates who in the *Phaedrus* first investigates this *machinic fate* of knowledge, and it is in this light that we should reread the *Grundrisse*. *Tekhnē* is what *opens* this question but also what makes it inaccessible and *closes it off*. And it is in these terms that Boehm concludes his own analysis:

Just as constantly as with the question of the meaning of being, Heidegger seems preoccupied by a problem that, although it shows itself in many different guises, in varying contexts and from changing perspectives, remains fundamentally the same: the problem that results from a technical condition within which thinking seems inevitably constrained whenever it intends to undertake a *setting-to-work of its truth*.⁶⁴⁴

Truth, *alētheia*, is *set into work* [*mise en oeuvre*], is *Werk*, that is, *work, machining, fabrication* [*travail, usinage et fabrication*].

In the language adopted in *Automatic Society* and *Dans la disruption* in order to pave the way for the continuation of *Technics and Time*, this ‘truth’ is that of exosomatization – which is also to say, what Hegel had already described as exteriorization,⁶⁴⁵ which constitutes the *Wirklichkeit* of the phenomenology of Spirit, and the production

of exosomatic organs as it is described by Marx and Engels in *The German Ideology*.

Exosomatization is *tekhne* inasmuch as through it being is given only while withdrawing – as *pharmakon*.

Indeed, any *tekhne* or technics to which thinking must nevertheless appeal in order to evoke the meaning of being seems that it must inevitably provoke a conflict between this original meaning of being and, precisely, the attempt to think it. Does being itself, therefore, originally refuse the evocation of its meaning?⁶⁴⁶

It is on the basis of such questions that we should read *Identity and Difference*,⁶⁴⁷ ‘The Turn’⁶⁴⁸ and ‘Time and Being’.⁶⁴⁹ Failing which, the provocation (*das Herausfordern*) that is *Gestell* remains incomprehensible, and falls into the disastrous interpretation of Heidegger by the French little Heideggerians.

Or would the technical provocation of being itself, according to the very meaning of being, be *both the only mode possible and the only authentic mode of such an evocation*, and in such a way that *thinking would succeed in bursting apart the meaning of being by the very fact of the failure of its work?*⁶⁵⁰

To *burst apart* [*éclater*] the meaning of being, to make it *fail*, therefore, would or could be ‘the *only authentic mode of* [...] an evocation’ of being! For once, we are indeed entitled to use an exclamation mark – here, as never before, on this register that gives so much to think about care-fully [*donner à panser*].

The failure is the default, that is, *hubris*, and *inasmuch as it is necessary*, even though it always re-commits [*refait*] the default, and does so as violence, *Gewalt*, which is also authority, that is, power.⁶⁵¹ It is this failure that becomes power precisely as that which is necessary, that is, what the Greeks called *anankē*, necessity as well as fate, *Geschick*. And this is what *dikē* means – which calls for *aidōs*, but about the latter Heidegger has here not one word to say.

But if this is so, should philosophy then forget being and simply concentrate its efforts on reaching the greatest perfection of its technique? Or, finally, would there still remain a possibility for thinking to discard its links to a technical condition?⁶⁵²

On this final question Heidegger would stumble until the end. As for the possibility that philosophy might ‘simply concentrate its efforts on

reaching the greatest perfection of its technique', this is the disastrous point to which we have arrived precisely in and since the denial and the disavowal of the technicity of *panser*.

Philosophy does not refer, here, only to what we call 'philosophy': it refers to the knowledge emerging from the history of being in totality, that is, in the first place, mathematics and physics, and then to everything that emerges in the twentieth century as cybernetics, which, in this sense, is also a kind of philosophy. We know that, for Heidegger, Wiener, along with Heisenberg, was a subject of his attention. But what Heidegger pays no attention to is that which constitutes – for care-ful thinking about the there (*Da*) within which *hubris* exercises the power and violence of *dikē*, which is not simply law (*nomos*) – a crucial new element, namely, *negentropic locality*, brought to light by Schrödinger in 1943.

To pay attention to this *there* that opens up a world 'poor in world', and to pay attention to the conditions for enriching this impoverished world that is also the violent possibility of a destruction of these worlds – such is our task, beyond Schrödinger as beyond Heidegger and Derrida, and this requires care-ful thinking about exosomatization.

The 'greatest perfection' of technics is what is attained *here* [*là*] where *Gestell* is imposed as 'the Being of what *is* today all over the earth', as Heidegger wrote at the beginning of 'Time and Being'.⁶⁵³ And it is *Gestell* that *thereby* establishes 'the relation of man to what has been called "Being" up to now'.⁶⁵⁴ These are the questions that open up with the conclusion of Rudolf Boehm's article.

28 The uncared-for

Let us ourselves (reader and author) recapitulate, and let us draw whatever conclusion is possible *at present*.

The duty of philosophy in the Anthropocene, where Florian can no longer have waking dreams, is to turn to the natural sciences as well as the human and social sciences, and also to the sciences and technologies of the digital, and to break with what has formed a disabling limit of 'deconstruction', namely: the absence of any dialogue with science and mathematics. We must go beyond this situation, which was established in the early 1970s. This requires a profound reinterpretation of *différance* and its traceological supplementarity.

This also means that here, philosophy does not come claiming an established right: it proposes a field characterized by a *spectrum of obligations* that affect all academic claims within the sphere of rationality – and this obviously amounts to *another interpretation of rationality* – that is, an interpretation of reason as the organ and the

function capable of dreaming, forming and setting-to-work ‘rational’ motives (that is, motor affects).

Here, reason is not dis-affected calculation, which in the twenty-first century becomes algorithmic, but rather a matter of the hermeneutic investment of traces, and of differentiating from the new anti-political economy in and through a neganthropological *différance* whose *operation must effect* bifurcations – after the default.

To make (the) *différance* can only be to articulate the logic of the supplement with the history of the supplement – and vice versa, which means, to *experience* [*expérimenter*] the logic of the supplement and to make it into an Epimethean affair in this sense, which cannot contain itself to *logos* inasmuch as ‘logocentrism’ has always involved a *failure to see that language is a case of exosomatization*. To experience the history of the supplement through the logic of the supplement and vice versa is to experiment with it by putting it to the test, to undergo the ordeal of the violence of *tekhne* in order to realize the necessary *pacification*. It is, in other words, to uphold the law [*faire droit au droit*], to face up to our *fatum* – but what *fatum*? The *fatum* of *generalized degradation* of a kind that Lévi-Strauss could never have envisaged, thought or cared for, or supported.

The duty of philosophy is to *make this différence* – which *performatively gives itself the law through this very fact*. It is, in other words, to bring this performativity, which so fascinated Derrida,⁶⁵⁵ to the point of its *fully noetic consideration*, so that it can again become *suggestive for care-ful thinking of theories of bifurcation*. A performative utterance constitutes an *event* occurring within a *context* and requiring a *signature*: it is, *in this way*, a bifurcation – and, precisely, a noetic bifurcation.

Philosophy must assume this task today, and it can do so only organologically: *the conditions of possibility and impossibility of performance understood in this sense are those of ‘code’, in Lessig’s sense*. This obviously raises the question of writing in Derrida’s sense, and of this very strange history of supplementarity in which *code* – which Derrida more or less imprudently related to the ‘genetic program’ (and on this point Atlan had grounds for disagreement: genetic code as it was thought in the epoch of *Of Grammatology* is today no longer conceived as a ‘program’) – has *today* become a *function*, serving not reason but, precisely, *the understanding*, and an *automatic* understanding, which is exactly what Chris Anderson describes, and as the *proletarianization of reason itself* (but Anderson sees nothing of this). But such an *automatic* understanding has, through this very fact, lost (its) reason.

Theories of positive and negative entropy, of dissipative structures, of chaos, order and disorder,⁶⁵⁶ but also information theory, cybernetics and their degraded extensions into cognitivism and even their integration by Gilbert Simondon into his (allagmatic) concept of information, are *incapable of being mobilized* for what we are here calling *panser* in the Anthropocene – care-ful thinking towards the Neganthropocene. All these forms of thinking, deriving from the nineteenth and twentieth centuries, remain fundamentally locked within a failure to consider *tekhne* – a neglect through which the *indifférence* of *tekhne* is able to come fully into play, as the unthought and the uncared-for, the *impansé*.

The 2015 and 2016 pharmakon.fr seminars and summer academies were devoted to showing that organology requires new ways of theorizing entropy and negentropy – as anthropy and neganthropy – where the *pharmakon* is what *always produces both entropy and negentropy* in ways that are not just those of the living. This is what cybernetics, information theory and cognitivism all ignore, as does Simondon.

Only on this condition will it be possible and fruitful to engage a new critique of political economy (passing through Georgescu-Roegen), at a moment when automation is consigning global capitalism to a structural insolvency that is itself equally global. Only a macro-economics founded on a *systemic culture of neganthropy* could bring about a new ‘shift’, giving rise to a new epoch of epokhality itself: an *epokhe* being what as such comes about thanks to a neganthropic bifurcation.

This is the significance of the questions of *Ereignis* and *Gestell* in ‘The End of Philosophy and the Task of Thinking’⁶⁵⁷ and ‘Time and Being’. These lectures were not given until after Boehm had published ‘Pensée et technique’⁶⁵⁸ – and they should be read on the basis of Boehm’s analysis, which breaks with Heideggerian *doxa* on many planes, including those by which Heidegger himself understood his own work, being himself intermittent, that is, falling prey [*déché-ant*], through those *backwards steps* [*reculs*] that are symptoms of his politico-spiritual errancy (the question of *Geist* imposing itself precisely here).⁶⁵⁹

Contrary to this *doxa*, *tekhne*, as Heidegger discusses it in *An Introduction to Metaphysics*, constitutes a quite singular regime of *différence* to which even Derrida ultimately remained indifférent – indifférent to its *as such* and to everything that in Heidegger stems from it. To think care-fully about this age of *différence*, which is therefore *necessarily also* an age of *indifférence*, is what Florian expects of us, without knowing it, precisely because he cannot know without us, who in turn cannot know without he who suffers the consequences

of this *indifférance*. He does not have within himself the resources to fight it, because *noetic différance cannot be constituted without transmission, without a heritage, which is always the more or less dampened violence of a test of strength with and in the intergenerational and the transgenerational.*

Indifférance is precisely what short-circuits this test, this combat (*polemos*), which is the scene spoken of by Heidegger in *An Introduction to Metaphysics* and interpreted by Boehm, a scene in which the name of necessity is *dikē* – ‘justice beyond law’, as Derrida said.

29 Machination

What is at stake in the *Grundrisse* is the *machinic fate* of knowledge – and, in this regard, we must return to the passage in *An Introduction to Metaphysics* where Heidegger elaborates the meaning of *tekhnē* as knowledge.

Boehm does not quote from the beginning of this passage, where it is a question of machination – *to mēkhanoen*⁶⁶⁰ – which constitutes the field of violence, *deinon*, and of the violent, *deinotaton*:

Violence, the violent, within which the action of the violence-doer moves, is the whole circuit of the machination, *to mēkhanoen*, which is entrusted to him.⁶⁶¹

Entrusted to him, that is, to ‘the action of the violence-doer’, that is, *to us*, ‘the being that we ourselves are’, and such that we are, there where we are: on the earth of the twenty-first century, an earth encircled by the geostationary satellites of the Entropocene.

We are not taking the word ‘machination’ in a pejorative sense. We are thinking, through it, something essential that announces itself to us in the Greek word *tekhnē*.⁶⁶²

This thesis, which introduces Heidegger’s whole discourse with respect to what establishes *tekhnē* as knowledge, illuminates the question of the interpretation of the verse of Pindar that Valéry made the epigraph of *Cimetière marin* – within which we must *try* to live:

Μή, φίλα ψυχά, βίον ἀθάνατον σπεῦδε,
τὰν δ’ ἔμπρακτον ἀντλεῖ μαχανάν.⁶⁶³

It is starting from these questions, reopened by Boehm, concerning what, in Heidegger, ties *tekhnē* to *dikē*, and such as we have introduced them into the interpretation of *Gestell* and *Ereignis*, that we must understand with Alain Frontier the impossibility of translating

μαχανάν – a question of idiom, that is, of idiocy, that is, of locality, which is the question of the *Da*, and which haunts *Dans la disruption* through and through: it is the question that sends us mad.

Notes

- 1 Plato, *Theaetetus* 155d.
- 2 Friedrich Nietzsche, *Anti-Education: On the Future of Our Educational Institutions* (New York: New York Review Books, 2016), Lecture 2.
- 3 This last point is what Hossein Derakhshan has referred to as a shift from a ‘books-internet’ to a ‘television-internet’. See Hossein Derakhshan, ‘The Web We Have to Save’, *Matter* (14 July 2015), available at: <<https://medium.com/matter/the-web-we-have-to-save-2eb1fe15a426>>. Cf., André Staltz, ‘The Web Began Dying in 2014, Here’s How’, *staltz.com* (30 October 2017), available at: <<https://staltz.com/the-web-began-dying-in-2014-heres-how.html>>.
- 4 Bernard Stiegler, *Technics and Time, 1: The Fault of Epimetheus* (Stanford: Stanford University Press, 1998), p. 21.
- 5 Bernard Stiegler, *Dans la disruption. Comment ne pas devenir fou?* (Paris: Les Liens qui Libèrent, 2016), p. 93, English translation forthcoming.
- 6 Stiegler, *Technics and Time, 1*, p. ix.
- 7 Bernard Stiegler, *Acting Out* (Stanford: Stanford University Press, 2009), p. 11.
- 8 Stiegler, *Dans la disruption*, p. 120. Stiegler’s account of how this happened in his case is recounted at the beginning of *Dans la disruption*.
- 9 Ibid.
- 10 Stanley Cavell, *Must We Mean What We Say?*, updated edition (Cambridge and New York: Cambridge University Press, 1976), p. 346. The text on ‘the avoidance of love’ from which this quotation is taken was written in 1966 and 1967 (see p. xi), that is, well into the great escalation of the Vietnam War. See pp. 344–46 for Cavell’s remarkable account of ‘America’ as needing proof of its existence, of feeling mortal, of evincing an insatiable thirst for love that *also* expresses itself as ‘killing itself and killing another country in order not to admit its helplessness in the face of suffering’ (p. 345).
- 11 ‘Transductive’, here, refers to an approach to thinking processes in which the terms of a relation cannot be understood as preceding the relation itself.

- 12 Karl Marx, *Grundrisse: Foundations of the Critique of Political Economy (Rough Draft)* (London: Penguin, 1973), p. 694.
- 13 On subsistence, existence and consistence, see Bernard Stiegler, *The Decadence of Industrial Democracies: Disbelief and Discredit, Volume 1* (Cambridge: Polity, 2011), pp. 89–93.
- 14 Friedrich Engels, letter to Karl Marx (21 March 1869), available at: <http://marxists.anu.edu.au/archive/marx/works/1869/letters/69_03_21.htm>.
- 15 Friedrich Engels, *Dialectic of Nature*, in Karl Marx and Friedrich Engels, *Collected Works, Volume 25* (London: Lawrence & Wishart, 1987), p. 334.
- 16 Oswald Spengler, *The Decline of the West, Volume 1: Form and Actuality* (New York: Alfred A. Knopf, 1947), pp. 421–22.
- 17 *Ibid.*, pp. 423–24.
- 18 Georges Canguilhem, ‘The Decline of the Idea of Progress’, *Economy and Society* 27 (1998), p. 323.
- 19 Claude Lévi-Strauss, *Tristes Tropiques* (Harmondsworth, Middlesex: Penguin, 1976), pp. 542–43.
- 20 Erwin Schrödinger, *What is Life? The Physical Aspect of the Living Cell* (1944), in *What is Life, with Mind and Matter and Autobiographical Sketches* (Cambridge: Cambridge University Press, 1992).
- 21 Alfred J. Lotka, ‘The Law of Evolution as a Maximal Principle’, *Human Biology* 17 (1945), pp. 188 and 192.
- 22 The relationship between simple exorganisms (psychic individuation processes) and complex exorganisms (collective individuation processes) thus mirrors that between simple organisms (single cells) and complex organisms (multicellular beings), where the latter are nothing but collections of systemically cohering simple organisms, and where these single cells have as the condition of their existence their participation in the complex organisms of which they are a part. And if complex organisms in turn have their conditions of possibility set by the exterior milieu that is their ecosystem, this must be understood as referring not just to the general conditions of the ‘environment’ but also to those arising from the *species*, that is, from the set of members with whom and through whom reproduction occurs. Likewise, for the simple exorganisms that we are, this exterior milieu amounts to the psychosocial milieu of the collective individuation processes to which we belong, along with all the anthropizations and idiomatizations that are constitutive of it through processes of transindividuation and technical individuation.

- 23 Claude Shannon, in Myron Tribus and E. C. McIrvine, 'Energy and Information', *Scientific American* 225:3 (September 1971), pp. 179–88.
- 24 See Bernard Stiegler, 'The New Conflict of the Faculties and Functions: Quasi-Causality and Serendipity in the Anthropocene', *Qui Parle* 26 (2017), pp. 79–99.
- 25 Yuk Hui, 'Simondon et la question de l'information', *Cahiers Simondon* 6 (2015), pp. 29–46.
- 26 Bernard Stiegler, *Technics and Time, 3: Cinematic Time and the Question of Malaise* (Stanford: Stanford University Press, 2011), p. 10.
- 27 Alfred North Whitehead, *The Function of Reason* (Princeton: Princeton University Press, 1929), p. 6.
- 28 *Ibid.*, p. 5.
- 29 *Ibid.*, p. 23.
- 30 *Ibid.*, p. 26.
- 31 *Ibid.*
- 32 *Ibid.*, p. 28.
- 33 See ch. 1., p. XXX.
- 34 André Leroi-Gourhan, *Gesture and Speech* (Cambridge, MA and London: MIT Press, 1993), p. 26.
- 35 Stiegler, *Dans la disruption*, p. 439.
- 36 Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed* (New York: Viking Penguin, 2005).
- 37 Bernard Stiegler, *What Makes Life Worth Living: On Pharmacology* (Cambridge: Polity, 2013).
- 38 Antoinette Rouvroy and Thomas Berns, 'Gouvernementalité algorithmique et perspectives d'émancipation', *Réseaux* 177 (2013), pp. 163–96.
- 39 Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep* (London and New York: Verso, 2013).
- 40 See Bernard Stiegler, *For a New Critique of Political Economy* (Cambridge: Polity, 2010).
- 41 But the latter gains its meaning only if it is accompanied by a grammatization of savoir faire, of work-knowledge, the knowledge of how to do and make, such that it leads to what, in the *Grundrisse*, Marx refers to as automation.

- 42 Bernard Stiegler, *Technics and Time, 3: Cinematic Time and the Question of Malaise* (Stanford: Stanford University Press, 2011).
- 43 *Translator's note*: On the 'concrecence' of a system, see, for example, Alfred North Whitehead, *Process and Reality*, corrected edition (New York: The Free Press, 1978), p. 7: 'The coherence, which the system seeks to preserve, is the discovery that the process, or concrecence, of any one actual entity involves the other actual entities among its components'. And pp. 21–22: 'Thus the "production of novel togetherness" is the ultimate notion embodied in the term "concrecence". These ultimate notions of "production of novelty" and of "concrete togetherness" are inexplicable either in terms of higher universals or in terms of the components participating in the concrecence. The analysis of the components abstracts from the concrecence'.
- 44 This cannot but radically affect ecological science, and not just ecological politics, but by inscribing the political future in the very heart of the science of the living that negotiates with the organized non-living and with the organizations that result from this negotiation.
- 45 Ludwig Von Bertalanffy, *General System Theory: Foundations, Development, Applications* (New York: Braziller, 1968).
- 46 Whitehead, quoted in E. R. Dodds, *The Greeks and the Irrational* (Berkeley and London: University of California Press, 1951), p. 179. The original is from Alfred North Whitehead, *Symbolism: Its Meaning and Effect* (New York: Fordham University Press, 1927), p. 88.
- 47 And I would like here to acknowledge my debt to Franck Cormerais and Jacques Gilbert, who convinced me that it is better to translate 'digital studies' as études *digitales* rather than as études numériques.
- 48 Michel Volle, *Iconomie* (Paris: Economica, 2014), p. 35. Cf., Volle, 'The Effects of Informatization on the Economic and Financial Crisis' (4–5 October 2010), available at: <http://www.aea-eu.com/2010Ankara/DOCUMENTS/Publication/Text/Volle_Michel.pdf>.
- 49 An intact nerve conducts electrical current at the speed of light (300,000 kilometres per second), but nerve impulses at a speed somewhere between 1 and 100 metres per second (in fact, in humans, they travel at 49 m/s in the upper limbs and 42 m/s in the lower limbs). See Bertrand Boutillier and Gérard Outrequin, 'Biologie du neurone – Electrophysiologie', *Anatomie*, available at: <<http://www.anatomie-humaine.com/Biologie-du-neurone.html>>.
- 50 See Matthew Philips, 'High-Speed Trading: My Laser Is Faster Than Your Laser', *Bloomberg* (24 April 2012),

available at: <<http://www.businessweek.com/articles/2012-04-23/high-speed-trading-my-laser-is-faster-than-your-laser>>.

- 51 Karl Marx, *Grundrisse: Foundations of the Critique of Political Economy (Rough Draft)* (London: Pelican, 1973), p. 705.
- 52 ‘Thanks to recent advances in the domain of information and communication technology, it is now possible to make an exchange of stock (an offer of sale or security) in an infinitesimal fraction of a second. For example, currently on the New York Stock Exchange, members can place an order every 37 microseconds, while barely ten years ago this time was one second’. Amir Rezaee, ‘Le Trading Haute Fréquence, une method de speculation ultra rapide...et ultra dangereuse’, *Le Nouvel Observateur* (18 April 2014), available at: <<http://leplus.nouvelobs.com/contribution/1191975-le-trading-haute-frequence-une-methode-de-speculation-ultra-rapide-et-ultra-dangereuse.html>>.
- 53 Rouvroy and Berns, ‘Gouvernementalité algorithmique et perspectives d’émancipation’, *Réseaux* 177 (2013), p. 181.
- 54 On these questions, see the paper given by Hidetaka Ishida at the 2014 pharmakon.fr summer academy.
- 55 On this ‘shock in return’ and its relation to Hegel’s ‘speculative proposition’, see Bernard Stiegler, *States of Shock: Stupidity and Knowledge in the Twenty-First Century* (Cambridge: Polity, 2015).
- 56 I will return in detail to these questions via Bergson in Bernard Stiegler, *Technics and Time*, 6.
- 57 Bernard Stiegler, *Automatic Society, Volume 1: The Future of Work* (Cambridge: Polity, 2016).
- 58 Karl Polanyi, *The Great Transformation: The Political and Economic Origins of Our Time* (Boston: Beacon Press, 1957).
- 59 Chris Anderson, ‘The End of Theory: The Data Deluge Makes the Scientific Method Obsolete’, *Wired* (23 June 2008), available at: <<http://www.wired.com/2008/06/pb-theory/>>.
- 60 Alan Greenspan, ‘Greenspan Testimony on Sources of Financial Crisis’, *The Wall Street Journal* (23 October 2008), available at: <<http://blogs.wsj.com/economics/2008/10/23/greenspan-testimony-on-sources-of-financial-crisis/>>.
- 61 Amartya Sen, *Development as Freedom* (New York: Alfred A. Knopf, 2000), p. xii.
- 62 Ibid.
- 63 Henri Atlan, *Entre le cristal et la fumée* (Paris: Le Seuil, 1979).

- 64 Edgar Morin, *The Nature of Nature* (New York: Peter Lang, 1992).
- 65 Whitehead, *The Function of Reason* (Princeton: Princeton University Press, 1929), pp. 18–19.
- 66 Morin, *The Nature of Nature*.
- 67 Claude Lévi-Strauss, *Tristes Tropiques* (Harmondsworth: London, 1976), p. 542, translation modified.
- 68 *Ibid.*, pp. 542–3, translation modified.
- 69 Gilles Deleuze, *Logic of Sense* (New York: Columbia University Press, 1990), p. 149.
- 70 Whitehead, *The Function of Reason*, p. 5.
- 71 See Sigmund Freud, *Civilization and Its Discontents*, in Volume 21 of James Strachey (ed.), *The Standard Edition of the Complete Psychological Works of Sigmund Freud* (London: Hogarth Press, 1953–74), p. 114.
- 72 This is why Lévi-Strauss says that the only time man is not entropic is ‘when he has been engaged in self-reproduction’.
- 73 It is with this organological disruption of the organic that Bertrand Bonello opens his film, *Tiresia* (2003).
- 74 André Leroi-Gourhan, *Gesture and Speech* (Cambridge, MA and London: MIT Press, 1993), p. 26.
- 75 It is this issue that the concert of monkeys and parrots intoned by little Derridians ten years after the death of Jacques Derrida ignores, in the belief they can simply accuse me of having lost sight of *différance* within an anthropocentric perspective. *Translator’s note*: On the parrot and the monkey as automatons, see René Descartes, *Discourse on the Method of Rightly Conducting One’s Reason and Seeking the Truth in the Sciences*, in John Cottingham, Robert Stoothoff and Dugald Murdoch (eds), *The Philosophical Writings of Descartes, Volume 1* (Cambridge: Cambridge University Press, 1985), pp. 139–41. See also Jacques Derrida, *The Animal That Therefore I Am* (New York: Fordham University Press, 2008), esp. pp. 76ff. Finally, for an example of a critique of Stiegler on the grounds that he fails to grasp the ‘most profound’ implications of Derrida’s account of *différance*, and hence as one representative voice coming from the chorus to which Stiegler refers, see Tracy Colony, ‘Epimetheus Bound: Stiegler on Derrida, Life, and the Technological Condition’, *Research in Phenomenology* 41 (2011), pp. 72–89.
- 76 Descartes, *Discourse on the Method of Rightly Conducting One’s Reason and Seeking the Truth in the Sciences*, in Cottingham et al.,

The Philosophical Writings of Descartes, Volume 1, pp. 142–43, translation modified.

- 77 Georges Bataille, 'The Notion of Expenditure', *Visions of Excess: Selected Writings, 1927–1939* (Minneapolis: University of Minnesota Press, 1985), p. 116.
- 78 *Ibid.*, p. 118.
- 79 *Ibid.*, p. 119.
- 80 *Translator's note*: For Levinas, the crucial problem arising out of *Being and Time* consists in the fact that while Heidegger distinguishes 'being' and 'beings', he does not conceive any possibility of being *without* beings, which Levinas prefers to call the problem of 'existing' without 'existents'. Clearly, this does not mean some simple 'presence' of being without beings, except as the presence of an absence, and in this gap there opens up the possibility of interpreting Levinas as describing what Stiegler here calls a 'default of being older than being'. See, for example, Emmanuel Levinas, *Time and the Other* (Pittsburgh: Duquesne University Press, 1987), pp. 46–47: 'How are we going to approach this existing without existents? Let us imagine all things, beings and persons, returning to nothingness. What remains after this imaginary destruction of everything is not something, but the fact that there is [*il y a*]. The absence of everything returns as a presence, as the place where the bottom has dropped out of everything, an atmospheric density, a plenitude of the void, or the murmur of silence. There is, after this destruction of things and beings, the impersonal "field of forces" of existing. There is something that is neither subject nor substantive. The fact of existing imposes itself when there is no longer anything. [...] Existing returns no matter with what negation one dismisses it. There is, as the irremissibility of pure existing'.
- 81 On the unknown, see Pierre Sauvanet, *L'insu: une pensée en suspens* (Paris: Arléa, 2011).
- 82 Bataille, 'The Notion of Expenditure', p. 125.
- 83 *Ibid.*, p. 126.
- 84 Whitehead, *The Function of Reason*, p. 5.
- 85 *Ibid.*, p. 15.
- 86 This is a project initiated by Gerald Moore. *Translator's note*: An early fruit of this project is Gerald Moore, 'On the Origin of *Aisthesis* by Means of Artificial Selection; or, The Preservation of Favored Traces in the Struggle for Existence', *Boundary 2* 44 (2017), pp. 191–212.

- 87 The object of desire is literally improbable because incomparable – and it is also on the basis of desire that Maurice Blanchot revisits and discusses the improbable of Yves Bonnefoy.
- 88 Whitehead, *The Function of Reason*, Introductory Summary.
- 89 Georges Canguilhem, *The Normal and the Pathological* (New York: Zone Books, 1991), p. 198.
- 90 *Ibid.*, p. 200.
- 91 Sigmund Freud, *Civilization and Its Discontents*, in Volume 21 of James Strachey (ed.), *The Standard Edition of the Complete Psychological Works of Sigmund Freud* (London: Hogarth Press, 1953–74).
- 92 Paul Valéry, ‘The Crisis of the Mind’, *The Outlook for Intelligence* (Princeton: Princeton University Press, 1989).
- 93 Edmund Husserl, *The Crisis of European Sciences and Transcendental Phenomenology* (Evanston: Northwestern University Press, 1970).
- 94 Bernard Stiegler, ‘To Love, to Love Oneself, to Love Us: From September 11 to April 21’, *Acting Out* (Stanford: Stanford University Press, 2009).
- 95 See Paolo Vignola, ‘Symptomatology of Collective Knowledge and the Social to Come’, *Parallax* 23 (2017), pp. 184–201.
- 96 Pope Francis, *Laudato Si’* (dated 24 May 2015; published 18 June 2015), available at: <http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html>.
- 97 *Translator’s note*: This text was subsequently included as Alain Jugnon, Jean-Luc Nancy and Bernard Stiegler, ‘Entretien sur le christianisme’ in Stiegler, *Dans la disruption. Comment ne pas devenir fou?* (Paris: Les Liens qui Libèrent, 2016), English translation forthcoming.
- 98 *Translator’s note*: This refers to the 2015 United Nations Climate Change Conference, also known as COP 21, the 21st annual meeting of the ‘Conference of the Parties’, which led to the adoption of the so-called Paris Agreement on 12 December 2015, available at: <http://unfccc.int/paris_agreement/items/9485.php>.
- 99 Bernard Stiegler, *Technics and Time, 3: Cinematic Time and the Question of Malaise* (Stanford: Stanford University Press, 2011).
- 100 Sylvain Auroux, *La Révolution technologique de la grammatisation. Introduction à l’histoire des sciences du langage* (Liège: Mardaga, 1994).

- 101 Bernard Stiegler, *The Decadence of Industrial Democracies: Disbelief and Discredit, Volume 1* (Cambridge: Polity, 2011), Stiegler, *Uncontrollable Societies of Disaffected Individuals: Disbelief and Discredit, Volume 2* (Cambridge: Polity, 2013) and Stiegler, *The Lost Spirit of Capitalism: Disbelief and Discredit, Volume 3* (Cambridge: Polity, 2014).
- 102 Bernard Stiegler, *Automatic Society, Volume 1: The Future of Work* (Cambridge: Polity, 2016).
- 103 Clarisse Herrenschildt, *Les Trois Écritures: langue, nombre, code* (Paris: Gallimard, 2007), p. 225.
- 104 In Edmund Husserl, *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy. Second Book: Studies in the Phenomenology of Constitution* (Dordrecht: Kluwer, 1989), §56 ‘Motivation as the fundamental lawfulness of spiritual life’, §§h, ‘Body and spirit as comprehensive unity: “spiritualized” Objects’, p. 248 (p. 236 of the German edition).
- 105 Friedrich Nietzsche, *The Gay Science* (Cambridge: Cambridge University Press, 2001), §125.
- 106 *Translator’s note*: On *otium* and *negotium*, see Stiegler, *The Decadence of Industrial Democracies*, ch. 3.
- 107 Jacques Derrida, ‘Plato’s Pharmacy’, *Dissemination* (Chicago: University of Chicago Press, 1981).
- 108 Stephen Hawking, Stuart Russell, Max Tegmark and Frank Wilczek, ‘Transcendence Looks at the Implications of Artificial Intelligence – But Are We Taking AI Seriously Enough?’, *Independent* (1 May 2014), available at: <<http://www.independent.co.uk/news/science/stephen-hawking-transcendence-looks-at-the-implications-of-artificial-intelligence-but-are-we-taking-ai-seriously-enough-9313474.html>>.
- 109 Patricia Pisters, ‘Cutting and Folding the Borgesian Map: Film as Complex Temporal Object in the Industrialization of Memory’, in Ulrik Ekman et al. (eds), *Ubiquitous Computing, Complexity, and Culture* (New York and London: Routledge, 2016), pp. 324–35.
- 110 *Translator’s note*: See Christian Salmon, *Storytelling: Bewitching the Modern Mind* (London and New York: Verso, 2010), esp. ‘The Destructuring Effects of the Apologia for Permanent Change’.
- 111 Nicholas Georgescu-Roegen, *The Entropy Law and the Economic Process* (Cambridge, Massachusetts and London: Harvard University Press, 1971), and Georgescu-Roegen, *Energy and Economic Myths: Institutional and Analytical Economic Essays* (New York: Pergamon, 1976).

- 112 Claude Lévi-Strauss, *Tristes Tropiques* (Harmondsworth, Middlesex: Penguin, 1976), p. 543.
- 113 Bernard Stiegler, *Automatic Society, Volume 1: The Future of Work* (Cambridge: Polity, 2016).
- 114 Jean-Pierre Changeux, *Neuronal Man: The Biology of Mind* (Princeton: Princeton University Press, 1997).
- 115 Bernard Stiegler, 'Préface', in Maryanne Wolf, *Proust et le calamar* (Anguilême: Abeille et Castor, 2015), the French translation of Wolf, *Proust and the Squid: The Story and Science of the Reading Brain* (New York: Harper, 2007).
- 116 Allen Buchanan, *Better than Human: The Promise and Perils of Enhancing Ourselves* (New York: Oxford University Press, 2011).
- 117 Bernard Stiegler, 'Lights and Shadows in the Digital Age', keynote lecture at the Digital Inquiry Symposium, Berkeley Center for New Media, University of California Berkeley (27 April 2012).
- 118 Bernard Stiegler, *Symbolic Misery, Volume 1: The Hyper-Industrial Epoch* (Cambridge: Polity, 2014), ch. 3.
- 119 *Translator's note*: Facebook.
- 120 Cf., Anthony D. Barnosky et al., 'Approaching a State Shift in Earth's Biosphere', *Nature* 486 (7 June 2012), pp. 52–8.
- 121 Martin Heidegger, 'Time and Being', *On Time and Being* (New York: Harper & Row, 1972).
- 122 Martin Heidegger, *Identity and Difference* (New York: Harper & Row, 1969).
- 123 Didier Debaise, 'What is Relational Thinking?', *Inflexions* 5 (2012), pp. 1–11, available at: <http://www.inflexions.org/n5_Debaise.pdf>.
- 124 Edmund Husserl, 'The Origin of Geometry', in Jacques Derrida, *Edmund Husserl's Origin of Geometry: An Introduction* (Lincoln and London: University of Nebraska Press, 1978).
- 125 *Translator's note*: The reference here is to the Latin phrase, '*Homo homini lupus est*', 'Man is wolf to man', to which Hobbes and Freud, among others, refer.
- 126 *Translator's note*: On 'repro-duction', see Bernard Stiegler, *Technics and Time, 3: Cinematic Time and the Question of Malaise* (Stanford: Stanford University Press, 2011), esp. pp. 213ff.
- 127 Jacques Derrida, 'My Sunday "Humanities"', *Paper Machine* (Stanford: Stanford University Press, 2005), p. 100.

- 128 Rudolf Boehm, 'Pensée et technique. Notes préliminaires pour une question touchant la problématique heideggérienne', *Revue Internationale de Philosophie* 14 (1960), pp. 194–220.
- 129 Georges Canguilhem, *The Normal and the Pathological* (New York: Zone Books, 1991), p. 236, translation modified.
- 130 Stanislas Dehaene, *Reading in the Brain: The New Science of How We Read* (New York: Penguin, 2009).
- 131 Paul Ricoeur, *Time and Narrative, Volume 1* (Chicago and London: University of Chicago Press, 1984), p. 58, translation modified.
- 132 Jean-Pierre Changeux, 'Préface', in Stanislas Dehaene, *Les Neurones de la lecture* (Paris: Odile Jacob, 2007), p. 14.
- 133 Ibid.
- 134 Reading is a *temporalization* of the spatial object that is the book: it is in its temporality that we can and must observe the collection of alphabetical textual traces in which reading consists, through which we make *selections* from *possible semantic combinations*, while *limiting them*.
It is this selection that Maryanne Wolf describes very precisely when, reading and interpreting Proust's *On Reading* (1905), she shows that each of us read something different in the same text. In Husserl's vocabulary, this means that it is on the basis of our secondary retentions, that is, of what we have already lived through, on the basis of our past, that we can project, in what we live through in a virtual way via reading, a material that, as a result, will be re-organized and re-combined by retaining, in the text that we have read, traits that constitute what Husserl called primary retentions, which hence appear here to be primary selections.
- 135 Changeux, 'Préface', in Dehaene, *Les Neurones de la lecture*, p. 14.
- 136 Ibid., p. 16.
- 137 Ibid.
- 138 In Bernard Stiegler, *Technics and Time, 1: The Fault of Epimetheus* (Stanford: Stanford University Press, 1998).
- 139 André Leroi-Gourhan, *Gesture and Speech* (Cambridge, MA and London: MIT Press, 1993).
- 140 Changeux, 'Préface', in Dehaene, *Les Neurones de la lecture*, p. 17.
- 141 Ibid., p. 19.
- 142 Wolf, *Proust and the Squid*, p. 3.

- 143 In Edmund Husserl, *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy. Second Book: Studies in the Phenomenology of Constitution* (Dordrecht: Kluwer, 1989), §56 ‘Motivation as the fundamental lawfulness of spiritual life’, §§h, ‘Body and spirit as comprehensive unity: “spiritualized” Objects’, p. 248 (p. 236 of the German edition).
- 144 *Ibid.*, p. 250 (p. 238 of the German edition).
- 145 Jorge Luis Borges, ‘The Garden of Forking Paths’, *Ficciones* (New York: Grove, 1962). The Spanish title of the story is ‘*El Jardín de senderos que se bifurcan*’ (1941).
- 146 René Thom, *Structural Stability and Morphogenesis: An Outline of a General Theory of Models* (Reading, MA: Addison-Wesley, 1989); René Thom, *Mathematical Models of Morphogenesis* (Chichester: Ellis Horwood, 1983).
- 147 Ernst Kapp, *Grundlinien einer Philosophie der Technik* (Braunschweig: Westermann, 1977).
- 148 Martin Heidegger, ‘Insight into That Which Is: Bremen Lectures 1949’, *Bremen and Freiburg Lectures* (Bloomington and Indianapolis: Indiana University Press, 2012).
- 149 *Ibid.*, p. 64. *Translator’s note*: Note that although these lectures were given in 1949, ‘The Turn’ was not published until 1962.
- 150 Antoinette Rouvroy and Thomas Berns, ‘Gouvernementalité algorithmique et perspectives d’émancipation’, *Réseaux* 177 (2013), pp. 163–96.
- 151 Bernard Stiegler, *Technics and Time, 3: Cinematic Time and the Question of Malaise* (Stanford: Stanford University Press, 2011).
- 152 Edmund Husserl, *On the Phenomenology of the Consciousness of Internal Time* (Dordrecht: Kluwer, 1991).
- 153 Gilbert Simondon, *On the Mode of Existence of Technical Objects* (Minneapolis: Univocal, 2017).
- 154 Bernard Stiegler, *Symbolic Misery, Volume 1: The Hyper-Industrial Epoch* (Cambridge: Polity, 2014); Stiegler, *Symbolic Misery, Volume 2: The Katastrophē of the Sensible* (Cambridge: Polity, 2015).
- 155 Sigmund Freud, *The Complete Letters of Sigmund Freud to Wilhelm Fliess, 1887–1904* (Cambridge, MA and London: Harvard University Press, pp. 278–81).
- 156 Sigmund Freud, *Civilization and Its Discontents*, in Volume 21 of James Strachey (ed.), *The Standard Edition of the Complete*

Psychological Works of Sigmund Freud (London: Hogarth, 1953–74), p. 99 n. 1 and p. 105 n. 3 (continuing to p. 106).

157 *Ibid.*, pp. 90–91.

158 Bernard Stiegler, *The Decadence of Industrial Democracies: Disbelief and Discredit, Volume 1* (Cambridge: Polity, 2011); Stiegler, *Uncontrollable Societies of Disaffected Individuals: Disbelief and Discredit, Volume 2* (Cambridge: Polity, 2013); Stiegler, *The Lost Spirit of Capitalism: Disbelief and Discredit, Volume 3* (Cambridge: Polity, 2014).

159 Bernard Stiegler, *Automatic Society, Volume 1: The Future of Work* (Cambridge: Polity, 2016).

160 Alfred North Whitehead, *The Function of Reason* (Princeton: Princeton University Press, 1929).

161 Bernard Stiegler, *Dans la disruption. Comment ne pas devenir fou?* (Paris: Les Liens Qui Libèrent, 2016), English translation forthcoming.

162 René Descartes, *Rules for the Direction of the Mind*, in John Cottingham, Robert Stoothoff and Dugald Murdoch (eds), *The Philosophical Writings of Descartes, Volume 1* (Cambridge: Cambridge University Press, 1985).

163 See Gottfried Wilhelm Leibniz, *Opuscles et fragments inédits* (Paris: Alcan, 1903), pp. 98–99. And see Stiegler, *Automatic Society, Volume 1* pp. 222–23.

164 Edmund Husserl, *The Crisis of European Sciences and Transcendental Phenomenology* (Evanston: Northwestern University Press, 1970).

165 Martin Heidegger, *Discourse on Thinking* (New York: Harper & Row, 1966), p. 56, translation modified.

166 See Michel Foucault, *History of Madness* (London and New York: Routledge, 2006), Jacques Derrida, ‘Cogito and the History of Madness’, *Writing and Difference* (Chicago: University of Chicago Press, 1978), Foucault, ‘My Body, This Paper, This Fire’, in James D. Faubion (ed.), *The Essential Works of Michel Foucault, 1954–1984, Volume 2: Aesthetics, Method, and Epistemology* (London: Penguin, 2000), and Stiegler, *Dans la disruption*, chs 9–10.

167 Descartes, *Rules for the Direction of the Mind*. Rule 15 states (p. 65): ‘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 alert’. Rule 16 states (p. 66): ‘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’.

- 168 *Translator’s note*: The reference to mechanography, here, is to the use of tabulating machines to read data recorded on punch cards, which began in the United States with the 1890 census.
- 169 Edmund Husserl, ‘The Origin of Geometry’, in Jacques Derrida, *Edmund Husserl’s Origin of Geometry: An Introduction* (London: University of Nebraska Press, 1978).
- 170 Aby Warburg, ‘A Lecture on Serpent Ritual’, *Journal of the Warburg Institute* 2 (1939), pp. 277–92.
- 171 *Translator’s note*: The author has recently begun to make use of these unusual terms, *pansée* and *panser*, mostly found in old French. The origin of these terms lies, in fact, in the care for, grooming of, and feeding of horses, and by extension comes to be used for care in general, and for the care of wounds, in the sense of dressing them in order that they may heal, in particular. See the detailed discussion in ch. 13, §6, in this volume.

It is necessary to draw the English reader’s attention to these terms because, while the French reader cannot fail to notice the similarity between *panser* and *penser* (to think), there is no way of conveying this in English. In this respect, the author’s linking of these terms presents a far greater problem to the translator than, for example, Heidegger’s linking of *Denken* and *Danken* (thinking and thanking). But this substitution of the letter *a* for an *e* is for Stiegler not just an echo of Heidegger but of Derrida, that is, of *différance*. It is necessary to beg the reader’s indulgence for the fact that a variety of stratagems have been employed in the translation of this term, rather than a single, uniform approach: there being no possibility of an ‘ideal’ solution, at times the word is kept in French, at other times it is translated as ‘to think care-fully’, ‘caring’ or ‘to care’, ‘take care of’ and at still other times as ‘thinking and caring’ or ‘think/care’. On yet other occasions, it is translated as ‘treating’, ‘to treat’ or ‘treatment’: in such cases, emphasis is placed on the therapeutic character of treatment, combined with the, say, ‘noetic’ sense of treating a problem in a treatise, but where this must specifically be distinguished from the sense of the ‘treatment’ of data by computational or algorithmic processing. This is in part a question of the *différance* that always accompanies the act of translation, as well as the transindividuation involved in the act of translation, but the hope motivating this proliferation of approaches is to fortify the reader’s tolerance for the occasional presence of this rather alien French term within the text by at other times providing assistance

with readability, so that together these strategies might encourage the reader to internalize the necessary associations.

- 172 *Translator's note*: On this question of becoming one's wound, and of its relation to quasi-causality, see Stiegler, *The Decadence of Industrial Democracies*, pp. 160–61: 'Joë Bousquet was shot in the lower back on 27 May 1918, and he never again raised himself up: he finished his life bedridden. And yet he did, nevertheless, raise himself: that is, he became a writer, and he *wrote* his wound, and he wrote that he *wanted to be* his wound and that he had the *power to be* his wound – that is, his accident, his *event* (as Deleuze put it), but this means here his *defect* [*défaut*] [...]. It is a matter here of thinking according to another figure of the will, which would not be that of the plenitude of the subject, that is, of its originarity, but, on the contrary of the subject's (de)fault of origin (and which requires that Stoic *quasi-causality* that constitutes the basis of the *Logic of Sense*): the fact, precisely, that its origin causes its defect [*son origine lui fait défaut*], and it is the *necessity* of this defect as its origin, its source, its provenance, to which it must respond – and in which I must believe. My wound, to which I respond, to which I want to respond: I want my defects, I want to *be* my defects – that is, my idioms: my *shibboleth*'.
- 173 Michel Foucault, 'Dream, Imagination and Existence', in Keith Hoeller (ed.), *Dream and Existence*, special issue of *Review of Existential Psychology & Psychiatry* 19:1 (1984–85), p. 51.
- 174 Gilbert Simondon, *Imagination et invention* (Paris: Presses Universitaires de France, 2014).
- 175 Michel Foucault, 'My Body, This Paper, This Fire', in James D. Faubion (ed.), *The Essential Works of Michel Foucault, 1954–1984, Volume 2: Aesthetics, Method, and Epistemology* (London: Penguin, 1998).
- 176 *Translator's note*: On *applicatio*, see Hans-Georg Gadamer, *Truth and Method*, 2nd revised edition (London: Sheed & Ward, 1989), esp. Part 2, II, 'Elements of a theory of hermeneutic experience'. And see Pietro Montani, 'Interpreting Between Recounted and Recountable Time. An Hermeneutical Approach', *European Journal of Psychoanalysis* 5 (1997), available at: <<http://www.psychomedia.it/jep/number5/montani.htm>>.
- 177 Roberto Esposito, *Communitas: The Origin and Destiny of Community* (Stanford: Stanford University Press, 2010).
- 178 *Translator's note*: The reference is to Fragment 18 of Heraclitus: 'One who does not hope for the un hoped-for [*anelpiston*] will not find it: it is undiscoverable so long as it is inaccessible'. Or, in T.M. Robinson's translation: 'If <he> doesn't expect <the> unexpected,

- <he> will not discover <it>; for <it> is difficult to discover and intractable'. See Heraclitus, *Fragments: A Text and Translation with a Commentary by T.M. Robinson* (Toronto: University of Toronto Press, 1987), p. 19.
- 179 Stiegler, *Symbolic Misery*, Volume 2, ch. 3.
- 180 *Translator's note*: This is the subtitle given to the French translation of Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep* (London and New York: Verso, 2013).
- 181 *Ibid.*, pp. 91–100, and see Stiegler, *Automatic Society*, Volume 1, §40.
- 182 Bernard Stiegler, *Dans la disruption. Comment ne pas devenir fou?* (Paris: Les Liens Qui Libèrent, 2016), English translation forthcoming.
- 183 Claude Lévi-Strauss, *Tristes Tropiques* (Harmondsworth: Penguin, 1976).
- 184 Sigmund Freud, *Moses and Monotheism*, in Volume 23 of James Strachey (ed.), *The Standard Edition of the Complete Psychological Works of Sigmund Freud* (London: Hogarth Press, 1953–74).
- 185 Michel Foucault, *The History of Madness* (London and New York: Routledge, 2006).
- 186 Michel Foucault, 'Dream, Imagination, and Existence', in Ludwig Binswanger, *Dream and Existence* (1986), first published in English as a special issue of *Review of Existential Psychology and Psychiatry* 19:1 (1984–5).
- 187 Marc Azéma, *La Préhistoire du cinéma. Origines paléolithiques de la narration graphique et du cinématographe...* (Paris: Errance, 2011). And see also Marc Azéma and Florent Rivère, 'Animation in Palaeolithic Art: A Pre-Echo of Cinema', *Antiquity* 86 (2012), pp. 316–24.
- 188 Bernard Stiegler, *Technics and Time, 3: Cinematic Time and the Question of Malaise* (Stanford: Stanford University Press, 2011).
- 189 Edmund Husserl, 'The Origin of Geometry', in Jacques Derrida, *Edmund Husserl's Origin of Geometry: An Introduction* (Lincoln and London: University of Nebraska Press, 1989).
- 190 René Descartes, *Rules for the Direction of the Mind*, in John Cottingham, Robert Stoothoff and Dugald Murdoch (eds), *The Philosophical Writings of Descartes, Volume 1* (Cambridge: Cambridge University Press, 1985). Rule 15 states (p. 65): '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 alert'. Rule 16 states (p. 66): '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’.

- 191 Peter Sloterdijk, *In the World Interior of Capital* (Cambridge: Polity, 2013).
- 192 Jean-Baptiste Fressoz, *L'Apocalypse joyeuse. Une histoire du risque technologique* (Paris: Seuil, 2012).
- 193 *Translator's note*: The author here refers to the distinction he makes between ‘adoption’ and ‘adaptation’. See, for example, Stiegler, *Technics and Time*, 3, p. 176, translation modified: ‘Becoming is not future, I might say with regard to the question of adoption, which is also necessarily fabrication. This means that adoption is not adaptation, since it is invention. An adoption without invention is the failure *and* the enticement that engenders disappointment and ill-being, as reactions compensating for a flawed action’.
- 194 See Gottfried Wilhelm Leibniz, *Opusculum et fragments inédits* (Paris: Alcan, 1903), pp. 98–99. And see Stiegler, *Automatic Society, Volume 1* pp. 222–23.
- 195 Sloterdijk, *In the World Interior of Capital*, p. 54.
- 196 *Ibid.* *Translator's note*: The phrase translated into English as ‘willingness to embrace delusion’ is rendered in the French edition as ‘propension à la folie’.
- 197 *Ibid.*, p. 57.
- 198 *Ibid.*, p. 59.
- 199 *Ibid.*, pp. 61–2.
- 200 Michel Foucault, *The Birth of the Clinic: An Archaeology of Medical Perception* (New York: Vintage, 1973).
- 201 Gille cites Schumpeter repeatedly.
- 202 Sloterdijk, *In the World Interior of Capital*, p. 74.
- 203 *Ibid.*
- 204 *Ibid.*, translation modified.
- 205 *Ibid.*, p. 75.
- 206 *Ibid.*, translation modified.

- 207 Alain Desrosières, *The Politics of Large Numbers: A History of Statistical Reason* (Cambridge, MA and London: Harvard University Press, 1998).
- 208 See Thomas Berns and Antoinette Rouvroy, 'Gouvernementalité algorithmique et perspectives d'émancipation', *Réseaux* 177 (2013), pp. 163–96.
- 209 Sloterdijk, *In the World Interior of Capital*, p. 85.
- 210 Ibid.
- 211 Ibid.
- 212 Ibid., p. 86.
- 213 Ibid., p. 87.
- 214 Ibid., p. 92.
- 215 Ibid., p. 112.
- 216 On the 'new barbarians', see Bernard Stiegler, *Dans la disruption. Comment ne pas devenir fou?* (Paris: Les Liens Qui Libèrent, 2016), ch. 4.
- 217 Sloterdijk, *In the World Interior of Capital*, p. 113.
- 218 Ibid., p. 209, translation modified.
- 219 I myself introduced this expression, *mal-être*, in *Technics and Time, 3: Cinematic Time and the Question of Malaise*, where, unfortunately, it was translated into English as 'malaise', erasing the 'question of being' or the *bad-question of being* that it contains – whose investigation we are attempting to continue.
- 220 Sloterdijk, *In the World Interior of Capital*, p. 212.
- 221 Ibid., p. 5.
- 222 Gilles Deleuze and Félix Guattari, *What is Philosophy?* (New York: Columbia University Press, 1994), p. 208, quoted in Sloterdijk, *In the World Interior of Capital*, p. 5.
- 223 Jean-Baptiste Lamarck, *Zoological Philosophy: An Exposition with Regard to the Natural History of Animals* (Chicago: University of Chicago Press, 1984).
- 224 Plato, *Republic* 488d–e.
- 225 Ibid., 369b–c.
- 226 Bertrand Gille, *The History of Techniques*, 2 vols (New York: Gordon and Breach, 1986).

- 227 Nicholas Georgescu-Roegen, *The Entropy Law and the Economic Process* (Cambridge, Massachusetts and London: Harvard University Press, 1971), and Georgescu-Roegen, *Energy and Economic Myths: Institutional and Analytical Economic Essays* (New York: Pergamon, 1976).
- 228 Alfred J. Lotka, 'The Law of Evolution as a Maximal Principle', *Human Biology* 17 (1945), pp. 167–94.
- 229 *Translator's note*: The concept of 'disruption' in a socio-economic sense was first developed by Jean-Marie Dru (of the giant advertising agency, TBWA) across several works.
- 230 Georges Canguilhem, *The Normal and the Pathological* (New York: Zone Books, 1991), pp. 200–1.
- 231 André Leroi-Gourhan, *Gesture and Speech* (Cambridge, MA and London: MIT Press, 1993).
- 232 Immanuel Kant, 'An Answer to the Question: "What is Enlightenment?"', *Political Writings* (Cambridge: Cambridge University Press, 1991).
- 233 Immanuel Kant, *Critique of Pure Reason* (London: Macmillan, 1929).
- 234 Bernard Stiegler, *For a New Critique of Political Economy* (Cambridge: Polity, 2010).
- 235 Bernard Stiegler, *Technics and Time, 3: Cinematic Time and the Question of Malaise* (Stanford: Stanford University Press, 2011).
- 236 Alfred North Whitehead, *The Function of Reason* (Princeton: Princeton University Press, 1929).
- 237 Amartya Sen, *Development as Freedom* (New York: Alfred A. Knopf, 2000).
- 238 Bob Holmes, 'Brain Drain: Are We Evolving Stupidity?', *NewScientist* (20 August 2014), available at: <<https://www.newscientist.com/article/mg22329830-400-brain-drain-are-we-evolving-stupidity/>>.
- 239 Betsy McKay, 'Life Expectancy for White Americans Declines', *Wall Street Journal* (20 April 2016), available at: <<https://www.wsj.com/articles/life-expectancy-for-white-americans-declines-1461124861>>.
- 240 Mats Alvesson and André Spicer, 'A Stupidity-Based Theory of Organizations', *Journal of Management Studies* 49 (2012), pp. 1194–220.
- 241 See Bernard Stiegler, *Automatic Society, Volume 1: The Future of Work* (Cambridge: Polity, 2016), pp. 4–6 and 58–60.

- 242 Ernst Kapp, *Grundlinien einer Philosophie der Technik* (Braunschweig: Westermann, 1977).
- 243 Émile Zola, *The Belly of Paris* (Oxford and New York: Oxford University Press, 2007).
- 244 Joseph A. Schumpeter, *Capitalism, Socialism and Democracy* (London: Allen & Unwin, 1976).
- 245 Pierre Veltz, *Des territoires pour apprendre et innover* (La Tour-d'Aigues: Aube, 1994).
- 246 Walter Benjamin, 'Critique of Violence', *Selected Writings, Volume 1: 1913–1926* (Cambridge, MA and London: Harvard University Press, 1996).
- 247 See Stiegler, *Automatic Society, Volume 1*, pp. 1–2.
- 248 Benjamin Bratton, *The Stack: On Software and Sovereignty* (Cambridge, MA: MIT Press, 2016).
- 249 Erwin Schrödinger, *What is Life? The Physical Aspect of the Living Cell* (1944), in *What is Life, with Mind and Matter and Autobiographical Sketches* (Cambridge: Cambridge University Press, 1992).
- 250 Claude Lévi-Strauss, *Tristes Tropiques* (Harmondsworth: Middlesex: Penguin, 1976), p. 543, translation modified: 'Thus it is that civilization, taken as a whole, can be described as an extraordinarily complex mechanism, which we might be tempted to see as offering an opportunity of survival for the human world, if its function were not to produce what physicists call entropy, that is inertia. Every verbal exchange, every line printed, establishes communication between two interlocutors, evening out a level where before there was an information gap and consequently a greater degree of organization. Anthropology could with advantage be changed into "entropology", as the name of the discipline concerned with the study of the highest manifestations of this process of disintegration'.
- 251 Benjamin Bratton, 'The Black Stack', *e-flux* 53 (March 2014), available at: <<http://www.e-flux.com/journal/53/59883/the-black-stack/>>.
- 252 Vladimir I. Vernadsky, *The Biosphere* (New York: Copernicus, 1998).
- 253 Martin Heidegger, 'Insight Into That Which Is: Bremen Lectures 1949', *Bremen and Freiburg Lectures: Insight Into That Which Is and Basic Principles of Thinking* (Bloomington and Indianapolis: Indiana University Press, 2012).
- 254 Alfred J. Lotka, 'The Law of Evolution as a Maximal Principle', *Human Biology* 17 (1945), pp. 167–94.

- 255 Bernard Stiegler, *Automatic Society, Volume 1: The Future of Work* (Cambridge: Polity, 2016).
- 256 Jean-Pierre Vernant, 'Hestia-Hermes: The Religious Expression of Space and Movement in Ancient Greece', *Myth and Thought among the Greeks* (New York: Zone Books, 2006), and see Bernard Stiegler, 'Literate Natives, Analogue Natives and Digital Natives: Between Hermes and Hestia', in Divya Dwivedi and Sanil V (eds), *The Public Sphere from Outside the West* (London and New York: Bloomsbury, 2015), pp. 213–24.
- 257 *Translator's note*: See Carl Schmitt, *The Nomos of the Earth in the International Law of the Jus Publicum Europaeum* (New York: Telos, 2006), Part I, ch. 4, and Part V, ch. 1. And see also Peter Szendy, *Kant in the Land of Extraterrestrials: Cosmopolitical Philosophical Fictions* (New York: Fordham University Press, 2013), ch. 1.
- 258 Nicholas Georgescu-Roegen, *The Entropy Law and the Economic Process* (Cambridge, Massachusetts and London: Harvard University Press, 1971), and Georgescu-Roegen, *Energy and Economic Myths: Institutional and Analytical Economic Essays* (New York: Pergamon, 1976).
- 259 Andrew Ure, *The Philosophy of Manufactures: or, An Exposition of the Scientific, Moral, and Commercial Economy of the Factory System of Great Britain* (London: Charles Knight, 1835).
- 260 Andrew Ure, quoted in Karl Marx, *Grundrisse: Foundations of the Critique of Political Economy (Rough Draft)* (London: Penguin, 1973), p. 690.
- 261 Rudolf Arnheim, *Entropy and Art: An Essay on Disorder and Order* (Berkeley: University of California Press, 1971).
- 262 *Translator's note*: See Plato, *Timaeus* 50a5–b5. The meaning of Plato's 'gold analogy' in *Timaeus* is much discussed in relation to the question of the *khōra* as a 'receptacle', a 'nurse' and a 'third kind'. The author discusses the analogy in Bernard Stiegler, *Technics and Time, 1: The Fault of Epimetheus* (Stanford: Stanford University Press, 1998), p. 109: 'Plato says in *Timaeus*, if the world were made of gold, gold would be the only thing that we could not know, since there would be nothing for us to oppose it to; nothing to which to compare it, no notion of it, and yet gold would be the only thing that we would truly know, for only gold would be in truth, the truth of all beings, being itself'. See also John Sallis, *Chorology: On Beginning in Plato's Timaeus* (Bloomington and Indianapolis: Indiana University Press, 1999), pp. 107ff.
- 263 Frédéric Kaplan, 'Vers le capitalisme linguistique. Quand les mots valent de l'or', *Le Monde diplomatique* (November 2011), available

- at: <<http://www.monde-diplomatique.fr/2011/11/KAPLAN/46925>>. See also Kaplan, 'Linguistic Capitalism and Algorithmic Mediation', *Representations* 27 (2014), pp. 57–63.
- 264 Gilles Châtelet, *To Live and Think Like Pigs: The Incitement of Envy and Boredom in Market Democracies* (London: Urbanomic, 2014), p. 48, and see Stiegler, *Automatic Society, Volume 1*, pp. 51–52.
- 265 Robert Musil, *The Man Without Qualities* (London: Picador, 1997).
- 266 Paul Virilio, *Speed and Politics* (Los Angeles: Semiotext(e), 2006).
- 267 Jacques Lacan, *The Seminar of Jacques Lacan, Book VII: The Ethics of Psychoanalysis, 1959–1960* (London: Routledge, 1992), p. 139.
- 268 *Translator's note*: Marcel Duchamp's concept of *inframince* has been translated into English as both 'infra-thin' and 'infra-slim'.
- 269 Bratton, 'The Black Stack'.
- 270 Graham Readfearn, 'We are Approaching the Trumpocene, a New Epoch Where Climate Change is Just a Big Scary Conspiracy', *Guardian* (21 October 2016), available at: <<https://www.theguardian.com/environment/planet-oz/2016/oct/21/we-are-approaching-the-trumpocene-a-new-epoch-where-climate-change-is-just-a-big-scary-conspiracy>>.
- 271 In the sense of 'functional integration' that Simondon describes as the process of concretization, and as what leads to what he calls *associated technogeographic milieus*: see Gilbert Simondon, *On the Mode of Existence of Technical Objects* (Minneapolis: Univocal, 2017). On the recent evolution of the latter, which Simondon never had the opportunity to analyse, see Bernard Stiegler, *The Re-Enchantment of the World: The Value of Spirit Against Industrial Populism* (London and New York: Bloomsbury, 2014), Bernard Stiegler, *Automatic Society, Volume 1: The Future of Work* (Cambridge: Polity, 2016), Bernard Stiegler, *Dans la disruption. Comment ne pas devenir fou?* (Paris: Les Liens qui Libèrent, 2016), English translation forthcoming, and Bernard Stiegler, *Qu'appelle-t-on panser? Au delà de l'Entropocène*, forthcoming.
- 272 See Gilbert Simondon, *L'Individuation à la lumière des notions de forme et d'information* (Grenoble: Jérôme Millon, 2005), pp. 529–36.
- 273 In the sense developed in the first chapter of Stiegler, *Automatic Society, Volume 1*, which took the case of Alan Greenspan as exemplary.
- 274 Chris Anderson, 'The End of Theory: The Data Deluge Makes the Scientific Method Obsolete', *Wired* (23 June 2008), available at: <<http://www.wired.com/2008/06/pb-theory/>>. See also the reply by Kevin Kelly, 'The Google Way of Science',

available at: <<http://kk.org/thetechnium/2008/06/the-google-way/>>, and my commentary in *Automatic Society, Volume 1*.

- 275 *Translator's note*: On the use and translation of *panser*, see n. 171, and ch. 13, §6.
- 276 Jacques Derrida, 'Plato's Pharmacy', *Dissemination* (Chicago: University of Chicago Press, 1981).
- 277 Gilles Deleuze, *Difference and Repetition* (London and New York: Continuum, 2011). On Deleuze and pharmacology, see Bernard Stiegler, *States of Shock: Stupidity and Knowledge in the Twenty-First Century* (Cambridge: Polity, 2015), ch. 2.
- 278 See Christophe Bonneuil and Jean-Baptiste Fressoz, *The Shock of the Anthropocene: The Earth, History and Us* (London: Verso, 2016).
- 279 *Translator's note*: On the notion of 'creative destruction', see Joseph A. Schumpeter, *Capitalism, Socialism and Democracy* (London: Allen & Unwin, 1976).
- 280 *Translator's note*: On Whitehead's notion of 'conrescence', see n.43 in this volume.
- 281 Claude Lévi-Strauss, *Tristes Tropiques* (Harmondsworth, Middlesex: Penguin, 1976), p. 543, discussed in Stiegler, *Automatic Society, Volume 1* and Stiegler, *Dans la disruption*.
- 282 Alfred J. Lotka, 'The Law of Evolution as a Maximal Principle', *Human Biology* 17 (1945), pp. 167–94.
- 283 Yuk Hui, *On the Existence of Digital Objects* (Minneapolis and London: University of Minnesota Press, 2016).
- 284 *Translator's note*. On accelerationism, see Robin Mackay and Armen Avanessian (eds), *#ACCELERATE: The Accelerationist Reader* (Windsor Quarry, Falmouth: Urbanomic, 2014).
- 285 Here we are referring to the cognitive sciences founded on the model of the 'Turing machine', referred to as computationalist, as well as to the connectivism of neuronal networks, artificial life, multi-agent systems, enactivism and the neurosciences, all of which may in one way or another be opposed to the reductionism of the earliest forms of computationalism.
- 286 Mats Alvesson and André Spicer, 'A Stupidity-Based Theory of Organizations', *Journal of Management Studies* 49 (2012), pp. 1194–220.
- 287 Graham Readfearn, 'We are Approaching the Trumprocene, a New Epoch where Climate Change is Just a Big Scary Conspiracy', *Guardian* (21 October 2016), available at: <<https://www.theguardian>.

com/environment/planet-oz/2016/oct/21/we-are-approaching-the-trumpocene-a-new-epoch-where-climate-change-is-just-a-big-scary-conspiracy>.

- 288 *Translator's note*: See, for example, Antonio Negri, *Reflections on Empire* (Cambridge: Polity, 2008), pp. 63–64: ‘Today we find ourselves in a way of life and in a way of producing that are characterized by the hegemony of intellectual labour. It has been said that we have entered the era of *cognitive capitalism*. People are studying the forms in which capitalism expresses itself and determines its development through these changes. People even talk about a *third capitalist transition*, after the phase of manufacturing and the subsequent phase of heavy industry. In this cognitive era the production of value depends increasingly on creative intellectual activity which, apart from placing itself beyond any valorization related to scarcity, also places itself beyond mass accumulation, factory accumulation and the like. *The originality of cognitive capitalism consists in capturing, within a generalized social activity, the innovative elements which produce value*’. And see Yann Moulier Boutang, *Cognitive Capitalism* (Cambridge: Polity, 2011).
- 289 Karl Marx, *Capital: A Critique of Political Economy, Volume One* (London: Penguin, 1990), p. 988.
- 290 See: <<https://neuralink.com>>.
- 291 *Translator's note*: Or, in the terms of the English translation of *Capital*, ‘objectified’.
- 292 In Derrida’s sense – the first to investigate this being Hegel.
- 293 Here we are borrowing Husserl’s terminology.
- 294 See: <<http://arsindustrialis.org/vocabulaire-ars-industrialis/transindividuation>>.
- 295 Notably in Bernard Stiegler, *For a New Critique of Political Economy* (Cambridge: Polity, 2010).
- 296 Karl Marx and Friedrich Engels, *The Communist Manifesto* (London: Penguin, 1967), p. 88, and see Stiegler, *For a New Critique of Political Economy*, pp. 37–39.
- 297 Karl Marx, *Grundrisse: Foundations of the Critique of Political Economy* (London: Penguin, 1973), pp. 690–712.
- 298 I owe my attention to this detail to Pierre-Jean Labarrière, thanks to his translation of *Knechtschaft* as servitude rather than as slavery, in G. W. F. Hegel, *Phénoménologie de l'Esprit* (Paris: Ellipses, 2014).
- 299 Gilles Deleuze, *The Logic of Sense* (New York: Columbia University Press, 1990).

- 300 In the first place TCP-IP, HTML and HTTP.
- 301 Bernard Stiegler, 'The New Conflict of the Faculties and Functions: Quasi-Causality and Serendipity in the Anthropocene', *Qui Parle* 26 (2017), pp. 79–99.
- 302 The establishing of such new epistemic and epistemological bases for a new digital organology is the goal of the Digital Studies Network, founded in 2013 at the Pompidou Centre at the initiative of IRI. See: <digital-studies.org>.
- 303 See Benjamin Bratton, 'The Black Stack', *e-flux* 53 (March 2014), available at: <<http://www.e-flux.com/journal/53/59883/the-black-stack/>>, and Bratton, *The Stack: On Software and Sovereignty* (Cambridge, Massachusetts: MIT Press, 2016).
- 304 See ch. 8, in this volume.
- 305 This was outlined in the pharmakon.fr seminar that ran from January to April 2017.
- 306 This was the starting point of positive critique in the seminar of pharmakon.fr in spring 2016.
- 307 From *On the Future of Our Educational Institutions* to the last fragments. On this subject, see Stiegler, *Qu'appelle-t-on panser? Au delà de l'Entropocène*, forthcoming.
- 308 Stiegler, *Automatic Society, Volume 1*, pp. 226–34.
- 309 *Translator's note: On skholē, otium and negotium*, see Bernard Stiegler, *The Decadence of Industrial Democracies: Disbelief and Discredit, Volume 1* (Cambridge: Polity, 2011), ch. 3.
- 310 Edmund Husserl, *On the Phenomenology of the Consciousness of Internal Time* (Dordrecht: Kluwer, 1991).
- 311 David Hume, *A Treatise of Human Nature: A Critical Edition* (Oxford: Clarendon Press, 2007).
- 312 André Leroi-Gourhan, *Gesture and Speech* (Cambridge, MA and London: MIT Press, 1993).
- 313 Gilles Deleuze, *Difference and Repetition* (London and New York: Continuum, 2011).
- 314 Donald A. Winnicott, *Playing and Reality* (London: Routledge, 1971).
- 315 Bernard Stiegler, *What Makes Life Worth Living: On Pharmacology* (Cambridge: Polity, 2013).
- 316 Viktor Klemperer, *The Language of the Third Reich: LTI – Lingua Tertii Imperii: A Philologist's Notebook* (London and New York: Bloomsbury Academic, 2013).

- 317 Bernard Stiegler, *Technics and Time, 3: Cinematic Time and the Question of Malaise* (Stanford: Stanford University Press, 2011).
- 318 On this subject, see Gilbert Simondon, *Imagination et invention* (Chatou: Transparence, 2008).
- 319 Marc Azéma, *La Préhistoire du cinéma: Origines paléolithiques de la narration graphique et du cinématographe...* (Paris: Errance, 2011). And see also Marc Azéma and Florent Rivère, 'Animation in Palaeolithic Art: A Pre-Echo of Cinema', *Antiquity* 86 (2012), pp. 316–24.
- 320 Niklas Luhmann, *Social Systems* (Stanford: Stanford University Press, 1995).
- 321 Bertrand Gille, *The History of Techniques*, 2 vols (New York: Gordon and Breach, 1986).
- 322 Frank Capra, *The Name Above the Title: An Autobiography* (New York: Macmillan, 1971), p. 223.
- 323 From the French Wikipedia entry on Godard's *Contempt*: 'In the final epigraph to the film, Jean-Luc Godard attributes to André Bazin the following quote: "Cinema replaces our gaze with a world that conforms to our desires". This quotation actually derives from an article by Michel Mourlet, entitled "Sur un art ignoré", which appeared in *Cahiers du cinéma* in 1959. The precise quote is: "Cinema is a gaze that replaces our own with that of a world that conforms to our desires"'.¹
- 324 Federico Fellini, *The Book of Dreams* (New York: Rizzoli, 2008).
- 325 *Translator's note*: This affirmation that television is not cinema should be contextualized, however, by referring to the opening lines of Bernard Stiegler, 'New Industrial Temporal Objects', in Rae Earnshaw, Richard Guedj, Andries van Dam and John Vince (eds), *Frontiers of Human-Centred Computing, Online Communities and Virtual Environments* (London: Springer-Verlag, 2001), p. 445: 'I would like to begin with an affirmation which at first glance may seem shocking, if not iconoclastic: I include television in cinema. [...] I [...] consider television as an epoch of cinema. Moreover, on a more general plane, cinema and television produce audiovisual objects which are also temporal objects. Phonography, cinema, radio and television constitute a sector of the production of industrial temporal objects'. That these seemingly contradictory affirmations are not truly irreconcilable should be obvious from the remainder of the author's argument in this chapter.
- 326 Jean-Luc Godard, *Introduction to a True History of Cinema and Television* (Montreal: Caboose, 2014), p. 25, translation modified.

- 327 *Translator's note*: On 'harming stupidity', see Friedrich Nietzsche, *The Gay Science* (New York: Vintage, 1974), §328.
- 328 André Bazin, *What is Cinema, Volume 1* (Berkeley and London: University of California Press, 1967), pp. 17–18: 'Paradoxically enough, the impression left on the reader by George Sadoul's admirable book on the origins of the cinema is of a reversal, in spite of the author's Marxist views, of the relations between an economic and technical evolution and the imagination of those carrying on the search. The way things happened seems to call for a reversal of the historical order of causality, which goes from the economic infrastructure to the ideological superstructure, and for us to consider the basic technical discoveries as fortunate accidents but essentially second in importance to the preconceived ideas of the inventors. The cinema is an idealistic phenomenon. The concept men had of it existed so to speak fully armed in their minds, as if in some platonic heaven, and what strikes us most of all is the obstinate resistance of matter to ideas rather than of any help offered by techniques to the imagination of the researchers.
 'Furthermore, the cinema owes virtually nothing to the scientific spirit. Its begetters are in no sense savants, except for Marey, but it is significant that he was only interested in analyzing movement and not in reconstructing it. Even Edison is basically only a do-it-yourself man of genius, a giant of the *concours Lépine*. Niepce, Muybridge, Leroy, Joly, Demeny, even Louis Lumière himself, are all monomaniacs, men driven by an impulse, do-it-yourself men or at best ingenious industrialists. [...] Any account of the cinema that was drawn merely from the technical inventions that made it possible would be a poor one indeed'.
- 329 Azéma, *La Préhistoire du cinéma*, p. 21.
- 330 *Translator's note*: For an account of the formation and work of the Medvedkin Groups, a cinema production group set up by Chris Marker and the factory workers of Besançon and Sochaux, see Trevor Stark, "'Cinema in the Hands of the People": Chris Marker, the Medvedkin Group, and the Potential of Militant Film', *October* 139 (2012), pp. 117–50, available at: <http://www.mitpressjournals.org/doi/pdf/10.1162/OCTO_a_00083>. And see also Bernard Stiegler, *Automatic Society, Volume 1: The Future of Work* (Cambridge: Polity, 2016), p. 204 and p. 309, n. 73.
- 331 'It could be said that everything begins with a library, with the political will for a library at the heart of the factory. When the worker Paul Cèbe managed to extract the opening of a library in the middle of the Rhodia plant at Besançon, he opened a breach. Through it he brought books, culture and other forms of consciousness into the daily struggle that is the factory. Paul Cèbe also loved films. He

- organized, thanks to a Parisian friend, screenings of films and presentations by the directors themselves. The friend was named Chris Marker. The directors who were invited were Agnès Varda and Jean-Luc Godard, among others'. Sébastien Rongier, 'Les Groupes Medvedkine', available at: <<http://remue.net/spip.php?article1726>>.
- 332 Godard, *Introduction to a True History of Cinema and Television*, p. 43.
- 333 And here it is necessary to mention, for example, what Godard said about money and the image or the likeness of Louis XVI, about the representation of the king on coins and its role in the process of transindividuation under the control of monarchical authority.
- 334 Godard, *Introduction to a True History of Cinema and Television*, p. 41.
- 335 *Ibid.*, p. 60.
- 336 *Ibid.*, p. 78, translation modified.
- 337 As Michel Gondry has recently shown, in his film, *Be Kind Rewind* (2008).
- 338 In, for example, *Contempt* (1963).
- 339 Thomas Berns and Antoinette Rouvroy, 'Gouvernementalité algorithmique et perspectives d'émancipation', *Réseaux* 177 (2013), pp. 163–96.
- 340 Chris Anderson, 'The End of Theory: The Data Deluge Makes the Scientific Method Obsolete', *Wired* (23 June 2008), available at: <<http://www.wired.com/2008/06/pb-theory/>>.
- 341 This notion can be fruitfully compared with Alan Greenspan's defence before a Congressional hearing: see Bernard Stiegler, *Automatic Society, Volume 1: The Future of Work* (Cambridge: Polity, 2016).
- 342 Jacques Derrida, 'To Unsense the Subjectile', in Jacques Derrida and Paule Thévenin, *The Secret Art of Antonin Artaud* (Cambridge, MA and London: MIT Press, 1998).
- 343 Marc Azéma, *La Préhistoire du cinéma: Origines paléolithiques de la narration graphique et du cinématographe...* (Paris: Errance, 2011). And see also Marc Azéma and Florent Rivère, 'Animation in Palaeolithic Art: A Pre-Echo of Cinema', *Antiquity* 86 (2012), pp. 316–24.
- 344 Fragment 123, in Heraclitus, *Fragments: A Text and Translation with a Commentary by T.M. Robinson* (Toronto: University of Toronto Press, 1987), pp. 70–71.

- 345 Aristotle, *Metaphysics*, 982b.
- 346 Dimitri A. Christakis, Frederick J. Zimmerman et al., 'Early Television Exposure and Subsequent Attentional Problems in Children', *Pediatrics* 113 (2004), pp. 708–13.
- 347 Maryanne Wolf, *Proust and the Squid: The Story and Science of the Reading Brain* (New York: Harper, 2007).
- 348 Katherine Hayles, 'Hyper and Deep Attention: The Generational Divide in Cognitive Modes', *Profession 2007* (2007), pp. 187–99.
- 349 Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep* (London and New York: Verso, 2013).
- 350 Jacques Derrida, 'No Apocalypse, Not Now: Full Speed Ahead, Seven Missiles, Seven Missives', *Psyche: Inventions of the Other, Volume 1* (Stanford: Stanford University Press, 2007).
- 351 In Bernard Stiegler, *Technics and Time, 3: Cinematic Time and the Question of Malaise* (Stanford: Stanford University Press, 2011).
- 352 Stiegler, *Automatic Society, Volume 1*, chs 4–5.
- 353 I have made a detailed case for such a program in Bernard Stiegler, *States of Shock: Stupidity and Knowledge in the Twenty-First Century* (Cambridge: Polity, 2015).
- 354 Tim Berners-Lee, *Weaving the Web: The Original Design and Ultimate Destiny of the World Wide Web* (New York: Harper Collins, 2000), pp. 157–8.
- 355 These circuits of transindividuation are infinitely long in that they provide access to 'consistences' that are both idealized and infinite, because they are infinitely open to their transformation in the course of processes of collective individuation that are themselves infinite: it is because geometry is structurally infinite that 'we geometers', as Husserl says, are, too. And this infinitude of knowledge is the counterpart of Socratic anamnesis. For noetic individuation to occur, psychic individuals must reconstitute within themselves the circuits of transindividuation on which it is inscribed.
- 356 In Simondon's sense in Gilbert Simondon, *Imagination et invention* (Chatou: Transparence, 2008).
- 357 Here, we should analyse from the perspective of Pierre Legendre the algorithmic automatization of what he himself calls the dogmatic. See Pierre Legendre, *Law and the Unconscious: A Legendre Reader*, ed. Peter Goodrich (Houndmills, Basingstoke and London: Palgrave Macmillan, 1997), chs 5 and 7.

- 358 See Bernard Stiegler (ed.), *La toile que nous voulons* (Paris: FYP Éditions, 2017).
- 359 *Translator's note*: See Geoffroy de Lagasnerie and Edouard Louis, 'Manifesto for an Intellectual and Political Counteroffensive', *Los Angeles Review of Books* (25 October 2015), available at: <<https://lareviewofbooks.org/article/manifesto-for-an-intellectual-and-political-counter-offensive/#!>>, where the sentence quoted above is rendered as: 'To experience politics, for most of us now, is to experience powerlessness'.
- 360 Karl Marx and Friedrich Engels, *The Communist Manifesto* (London: Penguin, 1967), p. 88, translation modified.
- 361 Bernard Stiegler, *Automatic Society, Volume 1: The Future of Work* (Cambridge: Polity, 2016).
- 362 Evgeny Morozov, 'The Rise of Data and the Death of Politics', *The Guardian* (20 July 2014), available at: <<https://www.theguardian.com/technology/2014/jul/20/rise-of-data-death-of-politics-evgeny-morozov-algorithmic-regulation>>.
- 363 Jean-François Lyotard, *The Postmodern Condition: A Report on Knowledge* (Minneapolis: University of Minnesota Press, 1984).
- 364 Bernard Stiegler, *States of Shock: Stupidity and Knowledge in the Twenty-First Century* (Cambridge: Polity, 2015), ch. 4.
- 365 Karl Marx, *Grundrisse: Foundations of the Critique of Political Economy* (London: Penguin, 1973), pp. 690–712.
- 366 Providing these specific proposals is also a way of offering a salute to Edgar Morin.
- 367 Victor Hugo, 'Preface', *The Hunchback of Notre-Dame*.
- 368 Bernard Stiegler, *Technics and Time, 1: The Fault of Epimetheus* (Stanford: Stanford University Press, 1998); Stiegler, *Technics and Time, 2: Disorientation* (Stanford: Stanford University Press, 2009); Stiegler, *Technics and Time, 3: Cinematic Time and the Question of Malaise* (Stanford: Stanford University Press, 2011).
- 369 *Translator's note*: This proposal has since been altered, with the proposed afterword growing to become a volume of the *Technics and Time* series itself, but see also Bernard Stiegler, 'The New Conflict of the Faculties and Functions: Quasi-Causality and Serendipity in the Anthropocene', *Qui Parle* 26 (2017), pp. 79–99.
- 370 *Translator's note*: In fact, the author refers here not to 'This text...' but to *Beyond the Entropocene*. The text published here is an earlier version of the text that will be published as Bernard Stiegler, *Qu'appelle-t-on panser? Au delà de l'Entropocène*. To make clear

that this remains an earlier, draft version, an earlier version of the title has been kept here. Note also that not all footnotes have been completed for the draft version published here.

- 371 See: <<https://en.oxforddictionaries.com/word-of-the-year/word-of-the-year-2016>>.
- 372 See Bernard Stiegler, *Dans la disruption. Comment ne pas devenir fou?* (Paris: Les Liens Qui Libèrent, 2016), §132, English translation forthcoming.
- 373 See Geoff Shullenberger, 'Mimesis, Violence and Facebook: Peter Thiel's French Connection', *The Society Pages* (August 13, 2016), available at: <<https://thesocietypages.org/cyborgology/2016/08/13/mimesis-violence-and-facebook-peter-thiels-french-connection-full-essay/>>, and Richard Feloni, 'Peter Thiel explains how an esoteric philosophy book explains his worldview', *Business Insider* (10 November 2014), available at: <<http://www.businessinsider.com/peter-thiel-on-rene-girards-influence-2014-11>>. It should be noted that the 'French connection' was previously the name of an international network of heroin traffickers – the most violent *pharmakon* at that time, which for William Burroughs would be the model of consumerist capitalism – based in Marseille and headed by Antoine Guérini.
- 374 Principally in Bernard Stiegler, *Automatic Society, Volume 1: The Future of Work* (Cambridge: Polity, 2016), §33 and Stiegler, *Dans la disruption*, §§42, 87 and 89.
- 375 If not as the greatest work of art, as Karlheinz Stockhausen claimed.
- 376 Peter Szendy, *Kant in the Land of Extraterrestrials: Cosmopolitical Philosophical Fictions* (New York: Fordham University Press, 2013).
- 377 Immanuel Kant, 'Idea for a Universal History with a Cosmopolitan Purpose', *Political Writings* (Cambridge: Cambridge University Press, 1991).
- 378 Which would thereby also be, perhaps, that which *exceeds* every question: as one says in French that facts are beyond understanding, what remains unquestioned in ill-being would exceed the possibility of reason – but it would be a matter, here, of reason inasmuch as it has configured not only an epoch but an era of reason, that of *ontology*.
- 379 *Translator's note*: On the translation of *panser* and *pansée*, see n. 171, and, in this chapter, §6.
- 380 Retentions and protentions establish *situations* and *projections* that may have occurred in the course of the 'history of truth' as what *constituted being* in primordial relation to good (*agathon*) and evil (*kakon*), which is also to say, to justice (*dikē*).

- 381 Bernard Stiegler, *States of Shock: Stupidity and Knowledge in the Twenty-First Century* (Cambridge: Polity, 2015), part 2.
- 382 These two stages are: (1) that of the appearance of tertiary retentions at the starting point of exosomatization, itself conceived as a moment of bifurcation where exosomatic organs become the primary selection factors; and (2) that of the appearance of hypomnesic tertiary retentions, in the Upper Palaeolithic, corresponding to the commencement of the noetic processes as we ourselves recognize them – as Georges Bataille saw in Lascaux.
- 383 See André Leroi-Gourhan, *Milieu et techniques* (Paris: Albin Michel, 1945) and Stiegler, *Technics and Time, 1*, part 1, ch. 1.
- 384 See Gilbert Simondon, *On the Mode of Existence of Technical Objects* (Minneapolis: Univocal, 2017) and Stiegler, *Technics and Time, 1*, part 1, ch. 1.
- 385 See Jacques Derrida, *Edmund Husserl's Origin of Geometry: An Introduction* (Lincoln and London: University of Nebraska Press, 1978).
- 386 For a concise summary of this concept, which supports all the work carried out after *Technics and Time, 1*, see Stiegler, *Dans la disruption*, §8.
- 387 It is thanks to a conversation with Richard Beardsworth in 1993 that attention is brought here to Nietzschean mnemotechnics as he describes it in the 'Second Essay' of Friedrich Nietzsche, *On the Genealogy of Morality* (Cambridge and New York: Cambridge University Press, 1994).
- 388 Though he sees it for the first time, and hence infinitely better than his predecessors, Marx included. On this question, see Bernard Stiegler, *La Société automatique 2. L'Avenir du savoir*, forthcoming.
- 389 Sigmund Freud, *Beyond the Pleasure Principle*, in Volume 18 of James Strachey (ed.), *The Standard Edition of the Complete Psychological Works of Sigmund Freud* (London, Hogarth, 1953–74), pp. 48–49.
- 390 Allagmatic relations are operational transductive relations, which put operations into play by establishing relations of scale between different orders of magnitude. Today, these relations and these orders of magnitude are trans-formed by allagmatic technologies of scalability, giving rise to planetary exorganisms.
- 391 See Aristotle, *Metaphysics*, 982b.
- 392 This is more fully explained in Stiegler, *States of Shock*.

- 393 Mechanical tertiary retention arises with the automatons of Vaucanson that develop into Jacquard's loom and then into the generalized process of the grammatization of the gestures of manufacturing with the development of industrial machinism.
- 394 See Alfred J. Lotka, 'The Law of Evolution as a Maximal Principle', *Human Biology* 17 (1945), pp. 167–94.
- 395 See Stiegler, *Automatic Society, Volume 1*, §26.
- 396 A term I owe to Tom Cohen and Paolo Vignola.
- 397 Not even an extra-planetary way out. On this subject, see Peter Szendy, *Kant in the Land of Extraterrestrials*. This question receives deeper treatment in a seminar of pharmakon.fr dedicated to the speculative cosmology of the twenty-first century, and in Stiegler, *La Société automatique 2*.
- 398 Jacques Derrida, *Of Spirit: Heidegger and the Question* (Chicago and London: University of Chicago Press, 1989).
- 399 *Translator's note*: See Martin Heidegger, *On Time and Being* (New York: Harper & Row, 1972), p. 24: 'To think Being without beings means: to think Being without regard to metaphysics. Yet a regard for metaphysics still prevails even in the intention to overcome metaphysics. Therefore, our task is to cease all overcoming, and leave metaphysics to itself'. Heidegger explains this further in the summary of the seminar: see p. 33: 'this phrase is the abbreviated formulation of: "to think Being without regard to grounding Being in terms of beings". "To think Being without beings" thus does not mean that the relation to beings is inessential to Being, that we should disregard this relation. Rather, it means that Being is not to be thought in the manner of metaphysics, which consists in the fact that the *summum ens* as *causa sui* accomplishes the grounding of all beings as such [...]. But we mean more than this. Above all, we are thinking of the metaphysical character of the ontological difference according to which Being is thought and conceived for the sake of beings, so that Being, regardless of being the ground, is subjugated to beings'.
- 400 'Provocation' is the word by which Heidegger's French translators render *herausfordern* in *La question de la technique*, and we shall return to this. *Translator's note*: In English translations of Heidegger, variations include 'challenging', 'challenging forth' and 'provocation'.
- 401 See preceding note.
- 402 Jacques Derrida, *Of Grammatology*, corrected edition (Baltimore and London: Johns Hopkins University Press, 1998), p. 5, translation modified. I have commented on this passage in Stiegler, *States of Shock*.

- 403 I use this word, symptomatology, in Paolo Vignola's sense. See Paolo Vignola, 'Symptomatology of Collective Knowledge and the Social to Come', *Parallax* 23 (2017), pp. 184–201.
- 404 See Jacques Derrida, 'How to Avoid Speaking: Denials', *Psyche: Inventions of the Other, Volume II* (Stanford: Stanford University Press, 2008), a dialogue with Jean-Luc Marion around *The Divine Names* of Dionysius the Areopagite. I have myself recently reread this text thanks to Paul Willemarck, and in relation to the question of *Geviert* and its Derridian translation by *cadran*. *Translator's note*: On *Geviert* and *cadran*, see, for example, Jacques Derrida, *The Truth in Painting* (Chicago and London: University of Chicago Press, 1987), p. 245. And, on 'deport', see, for example, Derrida, *Limited Inc* (Evanston: Northwestern University Press, 1988), p. 56.
- 405 This risk is the issue in *States of Shock*, which tries to show that this risk affects all 'French theory', especially when it tends to patrimonialize itself in order to become 'cultural', that is, the so-called 'postmodern' age of Franco-intellectual academic folklore and at the same time the instrument for the justification and repression of carelessness and thoughtlessness [*impansé*].
- 406 See Bernard Stiegler, *What Makes Life Worth Living: On Pharmacology* (Cambridge: Polity, 2013), ch. 6.
- 407 Henri Bergson, *The Two Sources of Morality and Religion* (Notre Dame: University of Notre Dame Press, 1977).
- 408 To accept such an infinite *différance*, to say *yes (amen)* to it, is what religious exorganizations alone had managed until then to maintain and cultivate – precisely as cults, that is, as forms of worship, as instrumentations, via the archiscopic instruments of worship, of *incommensurable and yet interiorized* relations of scale. This is the issue with respect to law that led Carl Schmitt to invoke the *katechon* in referring to Paul's *Epistle to the Thessalonians*, and hence to the Antichrist.
- 409 What we are here calling anti-entropy is what Schrödinger called negative entropy, or negentropy. It is Norbert Wiener who, four years after Schrödinger's lectures in Dublin, created the expression 'anti-entropy', which was later taken up by Bailly and Longo.
- 410 Jacques Derrida, *The Post Card: From Socrates to Freud and Beyond* (Chicago and London: University of Chicago Press, 1987), p. 280.
- 411 *Ibid.*: 'Let us arbitrarily leave aside all the problems posed by the borrowing of this energetic "model", if borrowing there is, and if the clarity concerning what "borrowing" means here is supposed'. In truth, it is Schrödinger to whom such analyses should be devoted. The latter is mentioned elsewhere, via François Jacob, but again

indirectly, and Derrida lacks the question of organogenetic *différance*, as we will show, on the basis of a study by Francesco Vitale, in Stiegler, *La Société automatique 2*.

- 412 *Translator's note*: On the translation of *panser* and *pansée*, see n. 171, and, in this chapter, §6.
- 413 Stiegler, 'The New Conflict of the Faculties and Functions: Quasi-Causality and Serendipity in the Anthropocene'.
- 414 Alfred Lotka, 'The Law of Evolution as a Maximal Principle'. On the stakes of this text as regards artificial intelligence, see the lecture by David Bates at the Entretiens du nouveau monde industriel 2016, available at: <<https://enmi-conf.org/wp/enmi16/session-3/#video>>.
- 415 See Nicholas Georgescu-Roegen, *The Entropy Law and the Economic Process* (Cambridge, Massachusetts and London: Harvard University Press, 1971), and Georgescu-Roegen, *Energy and Economic Myths: Institutional and Analytical Economic Essays* (New York: Pergamon, 1976).
- 416 There can be no negative entropy: entropy irreversibly increases, whereas negative entropy would imply a reversibility that Carnot, Clausius and Boltzman all rejected. This is why Bailly and Longo, like Wiener, refer to anti-entropy. Anti-entropy is what locally defers the irreversible increase of entropy, and it is as such that it is, in a strict sense, to the letter (a), a *différance*.
- 417 Endosomatic organogenesis is the condition of assimilation between organisms, which Schrödinger described as a transmission of anti-entropic potentials, via, for example, the function of digestion.
- 418 Sigmund Freud, *Civilization and Its Discontents*, in Volume 21 of Strachey (ed.), *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, p. 90.
- 419 On this term, which we should understand literally – and as the price paid for what Simondon described as a *functional integration of machines* into technogeographic associated milieus – and on its meaning in algorithmic governmentality, see Stiegler, *Automatic Society, Volume 1*, §§17, 26 and 30.
- 420 See Stiegler, *Dans la disruption*.
- 421 It is, indeed, a question of an era, and not of an epoch. This has already been discussed in Stiegler, *Dans la disruption*, §§54, 80 and 82.
- 422 This is the subject of Stiegler, *La Société automatique 2. L'Avenir du savoir*.

423 This word, which comes to us from *Tristes Tropiques*, lies at the origin of everything that we have developed since *Automatic Society, Volume 1*.

424 In addition to occasional short works such as the two parts composing *Acting Out*, the *Disbelief and Discredit* series and the *Symbolic Misery* series introduced the themes of organology and pharmacology from a perspective turned resolutely towards the re-examination of political economy, as well as to what Sigmund Freud called *libidinal economy* and Georges Bataille called *general economy*.

Pharmacology, which is obviously inspired by *Phaedrus* and Derrida's commentary on it, nevertheless adds to the reading of the author who nourished all these works a dimension of inspiration closer to Gilles Deleuze, and, in some respects, Michel Foucault. Convoking, finally and always more systematically, Friedrich Nietzsche, this pharmacology is also in dialogue with the research through which Barbara Stiegler has enabled Nietzsche to be reread from a perspective freed from the characteristic and sometimes caricaturish traits of French philosophy at the end of the twentieth century.

After *States of Shock*, themes were introduced in *Automatic Society, Volume 1* and *Dans la disruption* that will be deepened in what follows – in particular the Anthropocene, exosomatization, entropology and neganthropology – in striving to combat the process of denials of all kinds that are produced in the disruptive extremity of the Anthropocene.

While taking up once again the course of *Technics and Time*, that is, in order to make a link to *La technique et le temps 4. Symboles et diabolos* [Translator's note: this will now be the fifth volume rather than the fourth], the present work tries to briefly reconstruct the links between, on the one hand, the first series, and, on the other hand, the works written in the meantime and that culminate with *La Société automatique 2. L'Avenir du savoir*.

Barring accident and necessity, and with the exception of a work that is still unfinished (*Mystagogies 1. De l'art et de la littérature* and *Mystagogies 2. De la musique et du cinéma*), the coming years will be devoted, at least in the sphere of so-called philosophical texts, to writing *La technique et le temps*.

What follows simultaneously takes up once again, summarizes and develops – through the addition of the considerations made necessary by the election of Donald Trump – on the one hand, the arguments of a seminar given at the Humboldt University of Berlin in the 2015 spring semester, at the invitation of Wolfgang Schäffner, which were pursued further at the *pharmakon.fr* seminar held during the same year at the Institut de recherche et d'innovation, and, on the other hand, the arguments of a lecture given in the autumn of 2015 at Princeton, devoted to the duty of philosophy.

- 425 See Stiegler, *Dans la disruption*, §§116–18.
- 426 The spring 2015 pharmakon.fr seminar tried to show how this continues to affect Maurice Godelier and contemporary anthropology in general.
- 427 *Translator's note*: With the introduction of a new fourth volume of the *Technics and Time* series, this would become the seventh rather than the sixth volume of the series, if and when it appears.
- 428 On this Leviathan, see Stiegler, *Automatic Society, Volume 1*, ch. 5.
- 429 On the profession of the professors, see Derrida, 'The University Without Condition', *Without Alibi* (Stanford: Stanford University Press, 2002), discussed in *States of Shock*.
- 430 See Feloni, 'Peter Thiel explains how an esoteric philosophy book explains his worldview'.
- 431 Girard articulates his mimetic theory with the theory of the scapegoat in René Girard, *Things Hidden Since the Foundation of the World* (London and New York: Bloomsbury, 2016).
- 432 See Gilles Deleuze and Félix Guattari, *A Thousand Plateaus* (London and New York: Continuum, 2004), pp. 244–45 and 253. We will return to this text in Stiegler, *La technique et le temps 5. La guerre des esprits* [*Translator's note*: With the introduction of a new fourth volume of the *Technics and Time* series, this would become the sixth rather than fifth volume], in order to re-examine the concepts of becoming and future, which are ultimately understood in *A Thousand Plateaus* according to a classical figure of the future, such that it would constitute a temporal modality of *ek-stasis* that being would be for the there-being that is Dasein, and not as *what bifurcates within thermodynamic becoming by deviating from averages*. We will see why it is with neganthropology that we must *reread Deleuze and Guattari in order to transvaluate them* – and by *thereby* transvaluing the Nietzschean transvaluation.
- 433 See Stiegler, *Dans la disruption*.
- 434 On this point, and on the singularity of the current situation in this regard (that is, the disruption and its speed), see Bernard Stiegler, *States of Shock*, §64.
- 435 Nicholas Georgescu-Roegen, *The Entropy Law and the Economic Process* (Cambridge, Massachusetts and London: Harvard University Press, 1971), and Georgescu-Roegen, *Energy and Economic Myths: Institutional and Analytical Economic Essays* (New York: Pergamon, 1976).

- 436 Paul Valéry, 'Le Cimetière marin/The Graveyard by the Sea', in Hugh P. McGrath and Michael Comenetz, *Valéry's Graveyard* (New York: Peter Lang, 2013), pp. 3–13.
- 437 Georges Canguilhem, *Knowledge of Life* (New York: Fordham University Press, 2008), p. xvii.
- 438 The Neganthropocene is what neganthropology tries to think, where thinking also means caring. The contours, axioms, theses and hypotheses of neganthropology will be specified in Stiegler, *La Société automatique 2*. Neganthropology aims to establish what the Anthropocene should become, 'transvaluated' by the Neganthropocene, thereby opening both a new epistemic era for noetic forms of life (against the de-noetization currently underway) and the possibility of a contributory economy founded on this new *epistēmē*, in turn generating new forms of knowledge – of how to live, do and conceive – starting from a quasi-causal (and non-'dialectical') reversal of what has proven itself to be *absolute non-knowledge*.
- 439 The theoretical elements presented here as the foundations of such a neganthropology will be more systematically developed in Stiegler, *La Société automatique 2*.
- 440 See Francis Bailly and Giuseppe Longo, 'Biological Organization and Anti-Entropy', *Journal of Biological Systems* 17 (2009), pp. 63–96.
- 441 This is what Bataille experienced and thought care-fully about [*pan-sé*] in his time and in his way.
- 442 The 'there is', *es gibt*, appears as the *putting in question of the question* when Heidegger, confronted with the *Gestell*, allows the question of the *it is* to withdraw.
- 443 Such a 'critique' obviously does not imply a 'mastery', contrary to what has been believed by some readers of *Technics and Time*, 3, who remain too eager to constantly repeat the same thing over and over again.
- 444 That this support can also be unbearable [*insupportable*] is what is depicted in the film by Paolo Taviani and Vittorio Taviani, *Padre Padrone* (1977).
- 445 See Karl Marx, *Grundrisse: Foundations of the Critique of Political Economy (Rough Draft)* (London: Penguin, 1973), and my commentaries in Stiegler, *States of Shock*, ch. 6 and *Automatic Society, Volume 1*, chs 5–7.
- 446 This is why Ars Industrialis (arsindustrialis.org) asserts the need to implement a contributory income, an experimental approach

undertaken in the Plaine Commune urban region (recherchecontributive.org).

- 447 See Michel Henry, *Marx: A Philosophy of Human Reality* (Bloomington: Indiana University Press, 1983).
- 448 In an extended sense of the concept of the technogeographical milieu presented in Simondon, *On the Mode of Existence of Technical Objects* – where it is a matter of physical geography, whereas here we are referring to human geography. See Stiegler, *Automatic Society, Volume 1*, §22.
- 449 See Simondon, *On the Mode of Existence of Technical Objects*, and my commentaries in Stiegler, *Technics and Time, 1*, Stiegler, *The Re-Enchantment of the World: The Value of Spirit Against Industrial Populism* (London and New York: Bloomsbury, 2014), and Stiegler, *Automatic Society, Volume 1*.
- 450 See Gilles Deleuze, ‘Postscript on Control Societies’, *Negotiations* (New York: Columbia University Press, 1995), pp. 177–82, and Stiegler, *Automatic Society, Volume 1*, §14.
- 451 This thesis is advanced in Bernard Stiegler, *For a New Critique of Political Economy* (Cambridge: Polity, 2011).
- 452 On denial, see Stiegler, *Dans la disruption*, §§12, 34, 50, 72 and 101, and ch. 15.
- 453 On this shift, see Anthony D. Barnosky et al., ‘Approaching a State Shift in Earth’s Biosphere’, *Nature* 486 (7 June 2012), pp. 52–8, and my commentary in Stiegler, *Dans la disruption*, esp. §20.
- 454 On this point, see Stiegler, *La Société automatique 2*, ch. 2.
- 455 This obstacle blocking the horizon is what Florian, my silent interlocutor in *Dans la disruption*, calls ‘the end’.
- 456 Martin Heidegger, *Being and Time* (Albany: State University of New York Press, 2010).
- 457 See Stiegler, *What Makes Life Worth Living: On Pharmacology*.
- 458 The operations of Dasein, that is, of its retentions and protentions, are the stakes of what Simondon called the allagmatic.
- 459 This question of violence, of *hubris* and of justice should obviously be articulated with the thought of Walter Benjamin.
- 460 See especially Martin Heidegger, ‘The Turn’, *Bremen and Freiburg Lectures: Insight Into That Which Is and Basic Principles of Thinking* (Bloomington and Indianapolis: Indiana University Press, 2012).

- 461 I develop this point in Stiegler, *What Makes Life Worth Living*, ch. 1. On what, with respect to this putting in question(s), encloses Heidegger's position and the 'fourfold' within 'metaphysics', and which encloses at the same time those whom, particularly in France, we call 'Heideggerians', see Stiegler, *Dans la disruption*, §126, and Stiegler, *La Société automatique 2*.
- 462 Stiegler, *Automatic Society, Volume 1*, ch. 5.
- 463 Stiegler, *La Société automatique 2* has the specific goal of showing that this new age of ideology (in the sense of *The German Ideology*) coincides with a new age (in the way we refer to the age of gold or bronze or fire) of exosomatization, which the transhumanists understand as requiring no criteria other than that of the market, that is, of calculation, in order to *non-allagmatically* effect the choices generated by the artificial selection through which, for the last three million years, technical life has exosomatically pursued the organogenesis of the living.
- 464 Bernard Stiegler, *Acting Out* (Stanford: Stanford University Press, 2009), pp. 1–2.
- 465 This is first enunciated by Valéry (in 1919 and again in 1939), then by Freud (1929) and eventually by Husserl (1934).
- 466 Rudolf Boehm, 'Pensée et technique. Notes préliminaires pour une question touchant la problématique heideggérienne', *Revue Internationale de Philosophie* 14 (1960), pp. 194–220.
- 467 Edmund Husserl, *The Crisis of European Sciences and Transcendental Phenomenology* (Evanston: Northwestern University Press, 1970), p. 10.
- 468 Adolf Hitler, text of the decree, dated 2 August 1934, requesting the 1934 plebiscite, quoted in Ralph Jessen and Hedwig Richter (eds), *Voting for Hitler and Stalin: Elections Under 20th Century Dictatorships* (Frankfurt and New York: Campus Verlag, 2011), p. 240.
- 469 Martin Heidegger, *What is Called Thinking?* (New York: Harper & Row, 1968).
- 470 See Roland Barthes, *Camera Lucida: Reflections on Photography* (London: Flamingo, 1984), p. 77.
- 471 It is the same, consequently, for Derrida, who is either treated as a god who must be repeated to the letter, which is beyond ridiculous for this thinker of the letter, or ignored – and ignored because he would supposedly be 'Heideggerian'.

- 472 See Edmund Husserl, 'The Origin of Geometry', in Jacques Derrida, *Edmund Husserl's Origin of Geometry: An Introduction* (Lincoln and London: University of Nebraska Press, 1978).
- 473 Here we should engage a dialogue with Patrick Boucheron and his great 'inaugural lecture' at the Collège de France on 17 December 2015. This will be outlined in Stiegler, *La Société automatique 2*. See Patrick Boucheron, *Ce que peut l'histoire* (Paris: Fayard, 2016), or see the video of the lecture, 'What History Can Do?', with simultaneous English interpretation, available here: <<http://www.college-de-france.fr/site/en-patrick-boucheron/inaugural-lecture-2015-12-17-18h00.htm>>.
- 474 Stiegler, *Dans la disruption*, §116.
- 475 *Translator's note*: See Jacques Derrida, *Learning to Live Finally: The Last Interview* (Houndmills, Basingstoke and New York: Palgrave Macmillan, 2007), pp. 25–26: 'I am referred to more and more often as a *survivor* – the last, the final representative of a "generation", that is, roughly speaking, the sixties generation. Without being strictly speaking true, this provokes in me not only objections but feelings of a somewhat melancholic revolt. In addition, since certain health problems have become, as we were saying, so urgent, the question of survival [*la survie*] or of reprieve [*le sursis*], a question that has always haunted me, literally *every instant* of my life, in a concrete and unrelenting fashion, has come to have a different resonance today. I have always been interested in this theme of survival, the meaning of which is *not to be added on* to living and dying. It is originary: life is living on, life is survival [*la vie est survie*]. To survive in the usual sense of the term means to continue to live, but also to live *after* death. When it comes to translating such a notion, Benjamin emphasizes the distinction between *überleben*, on the one hand, surviving death, like a book that survives the death of the author, or a child the death of his or her parents, and, on the other hand, *fortleben*, *living on*, continuing to live. All the concepts that have helped me in my work, and notably that of the trace or of the spectral, were related to this "surviving" as a structural and rigorously originary dimension'.
- 476 And more precisely, if I believe a conversation that I had with Warren Sack, in Provençal. As for old French and old German ('Old High German'), they bear within them the whole question and problem of the *there* and of its *no-longer-being-there* in the absence of epoch. In the next volumes of *Technics and Time*, and in particular in the final volume, I will go into these questions of *not-being-there* as such, that is, as questions of *locality*. We will see that *locality* is what Heidegger cannot think care-fully [*panser*] because, like most of the philosophers of the twentieth century, and with the exception of Bergson, he ignored the issue of entropy and the issue of localities

that form negentropically – even though the *there* of Dasein, insofar as it always presents itself as being not (yet) there, is neganthropological. That there which is not yet, and which, in this there, is *not thought* yet (see *What is Called Thinking?*, a text in which Heidegger thinks thinking firstly as memory), is exosomatic. This means that it is not a simple locality such as the *Umwelt* of the animal. It is an *ēthos*, which is also to say, the *khōra* of a taking place constrained by *dikē* and *aidōs* as the *criteria of artificial selection* for which *phusis* provides to mortals *no given or donation* other than their very facticity within the default such as it can, and in that must, become that which is necessary, *anankē*. These questions, which will be thoroughly disentangled [*débroussaillées*] in *La Société automatique 2*, will set out the path that will be opened up in the final three volumes of *Technics and Time*, as the breakthrough from the Anthropocene to the Neganthropocene.

- 477 Alain Rey (ed.), *Dictionnaire historique de la langue française* (Paris: Le Robert, 2012).
- 478 These questions of assimilation and selection will be entered into more deeply, with Nietzsche and with the analyses of Barbara Stiegler (in *Nietzsche et la biologie* [Paris: PUF, 2001] and *Dionysos et la critique de la chair* [Paris: PUF, 2005]), in Bernard Stiegler, *La Société automatique 2*, ch. 3.
- 479 Rey, *Dictionnaire historique de la langue française*.
- 480 Plato, *Meno*, discussed in Stiegler, *Technics and Time*, 1, ch. 5, esp. pp. 97–98. *Translator's note*: And see Bernard Stiegler, 'Persephone, Oedipus, Epimetheus', *Tekhnema* 3 (1996), pp. 88–91.
- 481 Rey, *Dictionnaire historique de la langue française*.
- 482 See Heidegger, *An Introduction to Metaphysics* (New Haven and London: Yale University Press, 2000), and Boehm's analyses in 'Pensée et technique'.
- 483 Bernard Stiegler, *Taking Care of Youth and the Generations* (Stanford: Stanford University Press, 2010).
- 484 See Jacques Derrida, 'Différance', *Margins of Philosophy* (Chicago and London: University of Chicago Press, 1982).
- 485 André Leroi-Gourhan, *Gesture and Speech* (Cambridge, Massachusetts and London: MIT Press, 1993), p. 97. *Translator's note*: And see Stiegler, *Technics and Time*, 1, pp. 154ff.
- 486 *Translator's note*: *Technique et langage* is the first volume of *La geste et la parole*.

- 487 *Translator's note: La mémoire et les rythmes* is the second volume of *La geste et la parole*. Both volumes were combined in the English translation.
- 488 André Leroi-Gourhan, *Milieu et techniques* (Paris: Albin Michel, 1945), and see Stiegler, *Technics and Time, 1*, pp. 43–44 and 53–56.
- 489 See Georges Canguilhem, *The Normal and the Pathological* (New York: Zone Books, 1991), p. 198, and Stiegler, *What Makes Life Worth Living*, p. 29.
- 490 Stiegler, *States of Shock*, ch. 5 attempts to show that we can interpret the Hegelian speculative proposition and what it misses starting from these return shocks. This in turn relates to why the project of Catherine Malabou, too, misses the essential, leading her to privilege the brain, just as Gall (according to Hegel) privileged the skull bone.
- 491 Of course, animal life can have exosomatic dimensions that are accommodations to the milieu. But we refer to exosomatization only when endosomatic organogenesis becomes dependent on exosomatic organogenesis, which, conversely, becomes independent of the biological conditions of endosomatic organogenesis.
- 492 Examples include Merlin Donald, Kim Sterelny and Michael Tomasello. Gerald Moore, thanks to whom I have discovered these works, is conducting a systematic and thorough investigation of artificial selection, starting from these new perspectives.
- 493 Leroi-Gourhan, *Gesture and Speech*, pp. 401–8.
- 494 We will see this by reading Heidegger with Boehm. But we should add here that the measure cannot be reduced to *dikē* in the tragic Greeks, and that it is also called *aidōs*, which, strangely enough, Heidegger never refers to in his project of thinking *tekhnē*.
- 495 Leroi-Gourhan, *Gesture and Speech*, p. 107, translation modified.
- 496 Marc Azéma, *La Préhistoire du cinéma. Origines paleolithiques de la narration graphique et du cinématographe...* (Paris: Errance, 2011). And see also Marc Azéma and Florent Rivère, 'Animation in Palaeolithic Art: A Pre-Echo of Cinema', *Antiquity* 86 (2012), pp. 316–24.
- 497 Georges Bataille, *Prehistoric Painting: Lascaux, or The Birth of Art* (Geneva: Skira, 1955).
- 498 On this point, see Stiegler, *La Société automatique 2*.
- 499 Yuk Hui, *On the Existence of Digital Objects* (Minneapolis and London: University of Minnesota Press, 2016).
- 500 See Stiegler, *Automatic Society, Volume 1*.

- 501 *Translator's note:* See, for example, Michel Deguy, *A Man of Little Faith* (Albany: State University of New York, 2014), p. 36: 'What is threatening today also threatens poetry. I often call it "the cultural". How can we resist this Threat, if not by renewing our attachment – to the world of the earth, to the literature of our languages, to the tradition of poetry?'
- 502 *Translator's note:* For Heidegger's analysis of *deinon* and *to deinoton*, see Heidegger, *An Introduction to Metaphysics*, esp. pp. 159–61, where Heidegger understands the latter in Sophocles's *Antigone* as referring to human being as both 'the uncanniest' and 'the most violent', but where it must be kept in mind that the entire of this lecture course is an attempt to pursue this understanding as an 'essence' rather than as a particular 'property' of the human being. This analysis is taken up again in 1942, in Martin Heidegger, *Hölderlin's Hymn 'The Ister'* (Bloomington and Indianapolis: Indiana University Press, 1996), esp. pp. 61–74. But unlike in 1935, in 1942 Heidegger also pays particular attention to the figure of Antigone herself as the supreme *deinon* (see pp. 102–5).
- 503 In Stiegler, *Dans la disruption*, I have tried to show that this passes through the opposition that is set up between calculation and meditation in Martin Heidegger, *Discourse on Thinking* (New York: Harper & Row, 1966).
- 504 Bataille, *Prehistoric Painting*, p. 12: 'Directly we enter the Lascaux Cave, we are gripped by a strong feeling [...] of presence – of clear and burning presence – which works of art from no matter what period have always excited in us'.
- 505 See Stiegler, *La Société automatique 2*. What is missing in Jean-François Lyotard, *The Differend: Phrases in Dispute* (Minneapolis: University of Minnesota Press, 1988), in his conjoined reading of Kant and Wittgenstein, is just such an account of the role of exosomatization in the noetic faculties.
- 506 See Azéma, *La Préhistoire du cinéma*, p. 21.
- 507 These questions should be considered in close relation to those raised by Aby Warburg, Ludwig Binswanger and the young Michel Foucault. See Stiegler, *Dans la disruption*.
- 508 *Translator's note:* See, for example, the letter from Adorno to Benjamin dated 18 March 1936, in Ernst Bloch, Georg Lukács, Bertolt Brecht, Walter Benjamin and Theodor Adorno, *Aesthetics and Politics* (London and New York: Verso, 1977), pp. 120–26.
- 509 Bataille, *Prehistoric Painting*, p. 119, translation modified: 'The Lascaux "Man in the Well" is one of the most significant of the earliest known figurations of the human being. [...] But the stiff, childlike

manner is unsettling, all the more so because of the bison's realistic execution – the bison is in every sense alive. The bison is wounded and the man is lifeless: although simply leaning backward, the man is stretched out, legs flung wide, hands open. Underneath the man is a traced bird, less awkward but no less childishly drawn; this bird without feet is perched, like a weathercock, atop a kind of rod.

'This scene has been responsible for varying and hardly reconcilable hypotheses. [...] I wish at once to stress one undeniable point: the difference in the presentations of the man and the beast. The bison itself falls within a kind of figuration of the real that could be called *intellectual realism* [...], the bison seems naturalistic in comparison with the man [who seems] awkward [...] and similar to children's simplifications. Many children would do a drawing like this one of the man; not one would attain the vigour and suggestive force of the bison picture. [...] Hence the paradoxical opposition of the representations of man and animal as it appears to us, from the outset, at Lascaux.

'On the whole, the human figures of the Reindeer Age conform to this profound separation, as if, through some systematic spirit, an effort was made to preserve man from the naturalism which, when it was a question of representing animals, achieved astonishing perfection'.

- 510 Stiegler, *Technics and Time*, 1, p. 155, translation modified.
- 511 An ontology that is based on the exclusion of *Weltgeschichtlichkeit* (§§76–83 of *Being and Time*) from the 'fundamental', a *Weltgeschichtlichkeit* that can be constituted only factually, accidentally, making of *Geschick* just one such *accidental necessity*.
- 512 And of the idiocy that it contains, as does any idiom, which, as we will see in *L'idiotie*, when it becomes the sixth [or seventh] volume of *Technics and Time*, is the condition of the there, *Da*: of *locality* inasmuch as it is *irreducible*.
- 513 On the absence of epoch, see Stiegler, *Dans la disruption*.
- 514 This text is a kind of connecting together of what, between 2000 and 2016, has led to a range of works in which concepts have been developed that were generally absent from *Technics and Time*, 1–3. The question of nihilism appears especially in *Disbelief and Discredit*, and is then developed systematically in the two volumes of *Automatic Society*, where it becomes a key issue.
- 515 On this dis-integration, see Stiegler, *Automatic Society, Volume 1*.
- 516 *Translator's note*: The reference here is to Heidegger, *Being and Time*, §7, p. 35 (German pagination), the point at which Heidegger is first attempting to characterize the way that phenomena show themselves in such a way as to require a phenomenology: 'What is it that

phenomenology is to “let be seen”? What is it that is to be called “phenomenon” in a distinctive sense? What is it that by its very essence becomes the *necessary* theme when we indicate something *explicitly*? Manifestly it is something that does *not* show itself initially and for the most part, something that is *concealed* [*verborgen*] in contrast to what initially and for the most part does show itself. But, at the same time, it is something that essentially belongs to what initially and for the most part shows itself, indeed in such a way that it constitutes its meaning and ground’.

- 517 See Bernard Stiegler, *Uncontrollable Societies of Disaffected Individuals: Disbelief and Discredit, Volume 2* (Cambridge: Polity, 2013), ‘Introduction’.
- 518 See Stiegler, *What Makes Life Worth Living*, p. 77.
- 519 In the sense of Stiegler, *Taking Care of Youth and the Generations*.
- 520 *Translator’s note*: See, for example, Maurice Blanchot, *The Space of Literature* (Lincoln: University of Nebraska Press, 1982), p. 229, and Blanchot, *The One Who Was Standing Apart from Me* (Barrytown: Station Hill Press, 1993), p. 24.
- 521 *Translator’s note*: ‘*Ursprüngliche Zeit*’ is often translated into English as ‘primordial time’. On this *ursprüngliche Zeit* see, for example, Heidegger, *Being and Time*, p. 329 (German pagination).
- 522 On the question of the dream, see also Stiegler, *Automatic Society, Volume 1*, ch. 3.
- 523 Immanuel Kant, ‘An Answer to the Question: “What is Enlightenment?”’, *Political Writings* (Cambridge: Cambridge University Press, 1991), p. 54.
- 524 See Stiegler, *What Makes Life Worth Living*, pp. 27–29.
- 525 See *ibid.*, pp. 14–15.
- 526 It may well be observed that it is not only history, but ‘-ology’ in general that is thus suspended. But I believe that organology and pharmacology are the effective and historical reality of this suspension – and that the objection against ‘-ology’ is what makes it possible to ‘hide behind one’s little finger’ [*se cacher derrière son petit doigt*’, avoid facing responsibility], and this is undoubtedly where digital studies must begin: by positing that the fingers and more generally the digits can always be used to hide.
- 527 Sylvain Auroux, *La Révolution technologique de la grammatization. Introduction à l’histoire des sciences du langage* (Liège: Mardaga, 1994).
- 528 Stiegler, *Technics and Time*, 3, pp. 214–15.

- 529 *Translator's note*: See Joseph Beuys, quoted in Bernard Stiegler, *Symbolic Misery, Volume 2*, p. 64. 'Man can only express himself through forms imprinted in matter. Which is certainly also already the case with the tongue'. Cf., Joseph Beuys, *What is Art?: Conversation with Joseph Beuys* (Forest Row: Clairview, 2004), p. 78, where the translation misses not only the reference to the tongue but the reference to imprinting as well.
- 530 This is what I have tried to show in the courses of pharmakon.fr.
- 531 Aby Warburg, 'A Lecture on Serpent Ritual', *Journal of the Warburg Institute* 2 (1939), pp. 277–92.
- 532 I argued in Bernard Stiegler, *Pharmacologie du Front national* (Paris: Flammarion, 2013) that it is this putting into reverse that Marx and Engels analysed in *The German Ideology*.
- 533 That is, having no hope of ever being equal to any god – and hence not forgetting that the fire of Zeus becomes, in the fabricating hands and numerating digits of mortals, a *pharmakon*, a 'dangerous supplement'.
- 534 By way of Deleuze, as I have explained in particular in *States of Shock*, but also through the *hermeneia* of Barbara Stiegler. This will be the issue in Stiegler, *La Société automatique 2*, ch. 2.
- 535 This was explained in the final chapter of Stiegler, *The Decadence of Industrial Democracies*. It was also the subject of my final discussion with Derrida, in Rio de Janeiro, in closing a symposium dedicated to him.
- 536 In Stiegler, 'How I Became a Philosopher', *Acting Out*, and in the courses of pharmakon.fr, especially during the first two years, that is, 2010–11 and 2011–12. This will be the main issue in *Symboles et diabolos*, the fourth [or fifth] volume of *Technics and Time*.
- 537 The surface of the water, which, once having fallen back into it, seems to it to be the surface of the air (the surface of the air as we sometimes see it when, in a swimming pool, while wearing a diving mask, we swim underwater like fish and peer up at what is above us: we see *the surface of the air* – as if this inversion restored something to the location).
- 538 This dialogue will be reread in detail in *Symboles et diabolos*.
- 539 We will read these works of Bergson in *L'idiotie*, the sixth [or seventh] volume of *Technics and Time*.
- 540 On the occasion of a symposium held at the University of Kent at the initiative of the Noötechnics group. See ch. 1 in this volume.
- 541 See Stiegler, *Automatic Society, Volume 1*.

- 542 Chris Anderson, 'The End of Theory: The Data Deluge Makes the Scientific Method Obsolete', *Wired* (23 June 2008), available at: <<http://www.wired.com/2008/06/pb-theory/>>. I comment on this text in Stiegler, *Automatic Society*, Volume 1.
- 543 Florian, in L'Impensable (coll.), *L'Effondrement du temps: Tome 1, Pénétration* (Paris: Le Grand Souffle Editions, 2006), p. 7. I interpret this testimony in Stiegler, *Dans la disruption*.
- 544 It was in 2014 at the University of Kent that I argued for the need for this 'entropology' so as to elaborate a new age of knowledge based on a neganthropology – during which one of the organizers of the conference, Benoît Dillet, reminded me that Claude Lévi-Strauss concluded the final chapter of *Tristes Tropiques* by claiming that anthropology might more accurately be described as an 'entropology'. See ch. 1 in this volume.
- 545 What follows is obviously only a start, to which *La Société automatique 2* will add further clarifications, and for which the final three volumes of *Technics and Time* will be the continuation – Inshallah.
- 546 With the exception of some paragraphs towards the end, the following text, as I have already indicated, was largely presented at Princeton University in the autumn of 2015.
- 547 I keep this word in Greek because it contains a dimension that is otherwise lost in classical hermeneutics: *hermeneia* above all means 'ex-pression', and this is the sense that is conveyed when Aristotle writes *Peri hermeneias*.
- 548 Derrida, *Of Grammatology*, pp. 4–5, translation modified, my italics.
- 549 Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep* (London and New York: Verso, 2013).
- 550 Jacques Derrida, *Who's Afraid of Philosophy? Right to Philosophy 1* (Stanford: Stanford University Press, 2002), and Jacques Derrida, *Eyes of the University: Right to Philosophy 2* (Stanford: Stanford University Press, 2004).
- 551 Pope Francis, *Laudato Si'* (dated 24 May 2015; published 18 June 2015), available at: <http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html>.
- 552 Charles Melman, *L'homme sans gravité* (Paris: Denoël, 2002).
- 553 *Grandeur et décadence d'un petit commerce de cinéma* (Jean-Luc Godard, 1986). Psychoanalysis, *pensée* par excellence, was for decades, especially through Freud, Klein, Winnicott and Lacan, a perpetual, conceptual construction site, producing, on the basis of its clinical practice, the most daring analyses and syntheses. Since

the loss of Lacan, and with rare exceptions (such as Paul-Laurent Assoun), it has become mostly the exploitation of its legacy in the form of a small business that seems, in the eyes of many – wrongly – to be as obsolete as haberdashery.

554 Derrida, *Of Grammatology*, p. 5.

555 Derrida concluded his introductory remarks on my thesis, which he supervised, in front of a jury chaired by Jean-Luc Marion, by asking me the question, ‘What is it you’re afraid of?’ In the course of the weeks and months that followed, I could not help but think that, in this way, Derrida was both downplaying the gravity of the situation I was attempting to describe as the uncontrolled extension of retentional technology, and making a show of being someone ‘who is not afraid’. The question I was raising, however, had nothing to do with fear [*peur*] in a way connected to cowardice, but to do with worry [*crainte*], in a way that requires courage.

556 Anthony D. Barnosky et al., ‘Approaching a State Shift in Earth’s Biosphere’, *Nature* 486 (7 June 2012), pp. 52–8. The article was summarized by its authors as follows: ‘Localized ecological systems are known to shift abruptly and irreversibly from one state to another when they are forced across critical thresholds. Here we review evidence that the global ecosystem as a whole can react in the same way and is approaching a planetary-scale critical transition as a result of human influence. The plausibility of a planetary-scale “tipping point” highlights the need to improve biological forecasting by detecting early warning signs of critical transitions on global as well as local scales, and by detecting feedbacks that promote such transitions. It is also necessary to address root causes of how humans are forcing biological changes’.

557 Nietzsche, who was not unaware of the question of entropy, nevertheless could not quite take on board what, with Schrödinger, would have strengthened his position with respect to nihilism and with respect to the task of philosophers after overcoming their ‘original sin’ – which is ‘their lack of historical sense’.

558 This is explained in Stiegler, *Automatic Society, Volume 1* and Stiegler, *Dans la disruption*, and will be explained in greater detail in Stiegler, *La Société automatique 2*.

559 These questions receive more detailed examination in Stiegler, *La Société automatique 2*.

560 On ‘anthropy’, which is not just entropy, but its pharmacological and organological effectation, see Stiegler, *La Société automatique 2*, ch. 3.

- 561 See François Châtelet, Jacques Derrida et al., *Le Rapport bleu: Les sources historiques et théoriques du Collège international de philosophie* (Paris: PUF, 1998).
- 562 Bernard Stiegler, *States of Shock*, p. 187.
- 563 Ibid.
- 564 Ibid.
- 565 Karl Polanyi, *The Great Transformation: The Political and Economic Origins of Our Time*, 2nd edn (Boston: Beacon, 2002).
- 566 Stiegler, *States of Shock*, p. 196.
- 567 Which led him to give the lecture in Berkeley – which in my view was a reversal of his own teaching, as I explain in *States of Shock* – that would be published as *L'université sans condition*.
- 568 Derrida, 'The Supplement of Copula: Philosophy before Linguistics', *Margins of Philosophy*.
- 569 Emile Benveniste, 'Categories of Thought and Language', *Problems in General Linguistics* (Coral Gables: University of Miami Press, 1971).
- 570 On this point, see Stiegler, *La Société automatique 2*.
- 571 Hui, *On the Existence of Digital Objects*.
- 572 The average speed of nerve impulses is fifty metres per second, but they can reach speeds of one hundred and twenty metres per second.
- 573 Lawrence Lessig, 'Code is Law', *Harvard Magazine* (Jan.–Feb. 2000), available at: <<http://harvardmagazine.com/2000/01/code-is-law.html>>.
- 574 I have raised this subject in commenting on Yann Moulier Boutang's *L'Abeille et l'Économiste* (Paris: Carnets Nord, 2010), in Stiegler, *Automatic Society, Volume 1*, pp. 211–12 and 229–30.
- 575 This question is lacking in the analyses of the relationships between law and technics by the great French jurist Alain Supiot.
- 576 See Peter Galison, *Einstein's Clocks and Poincaré's Maps: Empires of Time* (New York: W.W. Norton, 2004).
- 577 Jacques Derrida and Bernard Stiegler, *Echographies of Television: Filmed Interviews* (Cambridge: Polity, 2002).
- 578 Jacques Derrida, *The Problem of Genesis in Husserl's Phenomenology* (Chicago and London: University of Chicago Press, 2003), p. 167. And see Stiegler, *Technics and Time*, 2, pp. 237–38. *Translator's note*: And see also Bernard Stiegler, 'Derrida and Technology: Fidelity at

the Limits of Deconstruction and the Prosthesis of Faith’, in Tom Cohen (ed.), *Jacques Derrida and the Humanities: A Critical Reader* (Cambridge: Cambridge University Press, 2001), pp. 240–41.

- 579 Plato, *Protagoras*. I translate *aidōs* by ‘vergogne’, and I have explained this in relation to our ‘today’ in Bernard Stiegler, *Constituer l’Europe 1. Dans un monde sans vergogne* (Paris: Galilée, 2005).
- 580 This is precisely what the mediology proposed by Régis Debray abandons – because it does not supply the means, posing itself as an alternative to philosophy, in relation to which it sometimes seems contaminated by resentment.
- 581 This will be developed in Stiegler, *La Société automatique 2*.
- 582 Alain Supiot, *Homo Juridicus: On the Anthropological Function of the Law* (New York and London: Verso, 2007).
- 583 In the sense I have developed in Stiegler, *The Decadence of Industrial Democracies*.
- 584 See Immanuel Kant, ‘What is Orientation in Thinking?’, *Political Writings*, and my commentary in Stiegler, *Technics and Time*, 3, p. 200.
- 585 Galison, *Einstein’s Clocks and Poincaré’s Maps*.
- 586 See: <recherchecontributive.org>.
- 587 See Stiegler, *Pharmacologie du Front national*, p. 181. This is what surviving Althusserians, cultivating their post-noetic boutiques, are incapable of understanding and therefore of thinking – which makes them incapable of thinking care-fully [*panser*], that is, of opening new political perspectives in a situation that nevertheless makes this necessity both obvious and absolute.
- 588 See Husserl, ‘The Origin of Geometry’, pp. 170–74.
- 589 But we must here totally reconsider the question of biopolitics and biopower – which is one of the subjects of Stiegler, *La Société automatique 2*, ch. 2.
- 590 Heidegger, *Being and Time*, p. 1 (German pagination).
- 591 *Ibid.*, §17.
- 592 Martin Heidegger, *The Basic Problems of Phenomenology* (Bloomington and Indianapolis: Indiana University Press, 1982), pp. 261–64.
- 593 See Stiegler, *Dans la disruption*.

- 594 The subject of Stiegler, *La Société automatique 2* is a new theory of the faculties founded on a history of the noetic functions that compose them.
- 595 See Stiegler, *Dans la disruption*.
- 596 See Emile Petitot, *Vocabulaire Français-Esquimaux: Dialecte des Tchigliit des Bouches du Mackenzie et de l'Anderson* (Cambridge: Cambridge University Press, 2012), p. xxxiii.
- 597 Warburg, 'A Lecture on Serpent Ritual'.
- 598 See Stiegler, *Technics and Time*, 3.
- 599 This will be analysed via Freud's *Beyond the Pleasure Principle* in *La guerre des esprits*, the fifth [or sixth] volume of *Technics and Time*.
- 600 See Stiegler, *La Société automatique 2*.
- 601 See Stiegler, *Automatic Society, Volume 1*, pp. 142–45 and 157–60.
- 602 See Nicholas Georgescu-Roegen, *The Entropy Law and the Economic Process*, and my commentary in Stiegler, *La Société automatique 2*.
- 603 Lessig, 'Code is Law'.
- 604 See Anaïs Nony's contribution to the 2016 pharmakon.fr summer academy.
- 605 See Stiegler, *La Société automatique 2*.
- 606 Ivar Ekeland, 'Hasard, chaos et mathématiques', in Réda Benkirane (ed.), *La Complexité, vertiges et promesses: 18 histoires de sciences* (Paris: Pommier, 2006), p. 266.
- 607 Catherine Malabou, *The New Wounded: From Neurosis to Brain Damage* (New York: Fordham University Press, 2012), p. xiii.
- 608 G. W. F. Hegel, *Phenomenology of Spirit* (Oxford: Oxford University Press, 1977), §343.
- 609 *Translator's note*: See Immanuel Kant, *Critique of Pure Reason* (London: Macmillan, 1929), p. 174, and see also Catherine Malabou, *Before Tomorrow: Epigenesis and Rationality* (Cambridge: Polity, 2016).
- 610 This is what I have tried to document more precisely in my last three books.
- 611 *Translator's note*: See Henri Bergson, *Matter and Memory* (New York: Zone Books, 1991), pp. 126–31.
- 612 I will return to this in detail in *L'idiotie*, the sixth [or seventh] volume of *Technics and Time*.

- 613 Consistence is a key concept developed in the *Disbelief and Discredit* series, and especially in the first volume.
- 614 Gabriel Tarde, *The Laws of Imitation* (New York: Henry Holt and Company, 1903).
- 615 Gilles Deleuze and Félix Guattari, *What is Philosophy?* (New York: Columbia University Press, 1994).
- 616 Stéphane Mallarmé, *Collected Poems and Other Verse* (Oxford and New York: Oxford University Press, 2006), pp. 16–17.
- 617 I am thinking especially of a reading and an interpretation of the preface of the *Phenomenology of Spirit* that we conducted together one winter on the island of Ushant, and which we recorded with a camera that I had just purchased – it must have been in 1984.
- 618 Maryanne Wolf, *Proust and the Squid: The Story and Science of the Reading Brain* (New York: Harper, 2007).
- 619 Boehm, ‘Pensée et technique. Notes préliminaires pour une question touchant la problématique heideggerienne’.
- 620 Stiegler, *What Makes Life Worth Living*, p. 105, my italics added.
- 621 Heidegger, *Being and Time*, p. 7 (German pagination), translation modified.
- 622 Stiegler, *What Makes Life Worth Living*, p. 105.
- 623 Clearly, a *pharmakon* does not ‘want’ anything. Nevertheless, it *seems to want* to be adopted: it seems to be animated. This is true of the fetish as well as of any tertiary retention insofar as it is ‘invested with spirit’. Such an investment is not reducible to the fetishized attributes of the commodity. It is possible only because the structure with which spirit is *composed* is that of revenance, that is, of haunting, which forms the horizons of *Weltgeschichtlichkeit* through which are arranged the always, the already, the still and the not yet that weave and are woven in primary and secondary psychic and collective retentions and protentions.
- 624 *Translator’s note*: On the author’s combined horological and philosophical use of ‘escapement’ in relation to the indeterminate and incalculable ‘instant of my death’ as the dynamic of the individuation of my singularity, see Stiegler, *The Lost Spirit of Capitalism*, p. 63.
- 625 On the meaning of this term in Heidegger’s ‘Letter on Humanism’, see my commentary in Stiegler, *Dans la disruption*, §133.
- 626 Heidegger, *Being and Time*, §§60–62.
- 627 *Werk* also means fabrication, manufacturing.

- 628 This is the moment to stress how in Martin Heidegger, *The Essence of Truth: On Plato's Cave Allegory and Theaetetus* (London and New York: Continuum, 2002), a lecture course given in 1931, he insisted that these questions of individuation be posed as a question of the *becoming* of Dasein, and, through that, of being inasmuch as it is only as history.
- 629 That this is also a question of *disorders of magnitude* is discussed in Stiegler, *Automatic Society, Volume 1*, §62.
- 630 Martin Heidegger, *On Time and Being* (New York: Harper & Row, 1972), p. 2.
- 631 Rudolf Boehm, 'Pensée et technique', p. 204.
- 632 Ibid.
- 633 Martin Heidegger, *An Introduction to Metaphysics* (New Haven and London: Yale University Press, 2000), pp. 169–70, translation modified. Boehm quotes the French translation by Gilbert Kahn.
- 634 *Translator's note*: Gregory Fried translates *Hinaussein* into English as 'Being-out-beyond', and hence very much in conformity with Kahn's 'être-au-dela'. The earlier translation by Ralph Manheim uses 'transcendence'. Here we have altered Fried's translation, bringing it slightly closer to Kahn's French, in order to make clearer the steps of Boehm's and Stiegler's arguments.
- 635 Ibid., pp. 169–70, translation modified.
- 636 Ibid., p. 170, translation modified.
- 637 Boehm, 'Pensée et technique', p. 199.
- 638 Ibid.
- 639 Heidegger, *An Introduction to Metaphysics*, p. 171, translation modified, quoted in Boehm, 'Pensée et technique', pp. 199–200.
- 640 Heidegger, *An Introduction to Metaphysics*, p. 171, translation modified, quoted in Boehm, 'Pensée et technique', p. 217, my italics. *Translator's note*: Note that this was translated rather differently into French as 'survient ce qu'il y a de plus inquiétant : l'être de l'homme, pour autant que l'homme existe, en tant qu'histoire'.
- 641 I will return to these questions in the subsequent volumes of *Technics and Time*, and to the difference of justice and law that they contain, passing through Nietzsche and the will to power on the basis of analyses undertaken in *La Société automatique 2*. Here, we must again quote Jacques Derrida, this time in 'Force of Law: The "Mystical Foundation of Authority"', *Acts of Religion* (New York and London: Routledge, 2002), p. 234: 'Heidegger will try to show that, for

Heraclitus, for example, *Dikē*, (justice, right, trial, penalty or punishment, vengeance, and so forth) – is *eris* (conflict, *Streit*, discord, *pólemos* or *Kampf*); that is, it is *adikia*, injustice, as well’.

- 642 Karl Marx and Friedrich Engels, *The German Ideology* (Moscow: Progress Press, 1976).
- 643 Fiduciary *différance* is what makes belief calculable, through which it is transformed into trust – in the market: into credit without *credo*. This introduction of calculability into the heart of the protentions in which *credo*, credit, trust, confidence and so on all consist, is what, in *Disbelief and Discredit*, follows from the problems discussed at the end of *Technics and Time*, 3. This is one of the threads that ties together all the books that have appeared since 2003. But what remains essential is *panser* in the Anthropocene – care-ful thinking towards the Neganthropocene.
- 644 Boehm, ‘Pensée et technique’, p. 217, my italics.
- 645 See Stiegler, *States of Shock*, ch. 5.
- 646 Boehm, ‘Pensée et technique’, p. 217.
- 647 Martin Heidegger, *Identity and Difference* (New York: Harper & Row, 1969).
- 648 Heidegger, ‘The Turn’, *Bremen and Freiburg Lectures*.
- 649 Heidegger, ‘Time and Being’, *On Time and Being*.
- 650 Ibid., my italics.
- 651 Derrida, ‘Force of Law’, p. 234: ‘*Gewalt* also signifies, for Germans, legitimate power, authority, public force. *Gesetzgebende Gewalt* is legislative power, *geistliche Gewalt* the spiritual power of the church, *Staatsgewalt* the authority or power of the state. *Gewalt*, then, is both violence and legitimate power, justified authority’.
- 652 Boehm, ‘Pensée et technique’, p. 217.
- 653 Heidegger, *On Time and Being*, p. 2.
- 654 Ibid.
- 655 *Translator’s note*: For example, in Jacques Derrida, ‘Declarations of Independence’, *Negotiations: Interventions and Interviews, 1971–2001* (Stanford: Stanford University Press, 2002).
- 656 These last terms are highly contested, especially by René Thom and his disciples.
- 657 Heidegger, ‘The End of Philosophy and the Task of Thinking’, *On Time and Being*. Also included in altered translation in

Heidegger, *Basic Writings*, revised and expanded edition (London: Routledge, 1993).

- 658 *Translator's note*: The lecture 'Time and Being' was given in January 1962 at the University of Freiburg and 'The End of Philosophy and the Task of Thinking' was given in April 1964 in Paris. The four lectures now published in English as 'Insight Into That Which Is', and which were the origin of Heidegger's account of *Gestell*, and the basis of 'The Question Concerning Technology' (a lecture given in November 1953 in Munich and published in 1954), were first given in 1949, but the crucial fourth of these lectures, 'The Turn' (also translated as 'The Turning'), was not published in German until 1962.
- 659 I will return to this in Stiegler, *La Société automatique 2*.
- 660 *Translator's note*: This phrase from the so-called 'ode to man' is from line 365 of the Loeb edition of *Antigone*. See Sophocles, *Antigone, The Women of Trachis, Philoctetes, Oedipus at Colonus* (Cambridge, Massachusetts and London: Harvard University Press, 1994), pp. 36–37.
- 661 Heidegger, *An Introduction to Metaphysics*, p. 169, translation modified.
- 662 *Ibid.*, translation modified.
- 663 Pindar, 'Pythian 3', 61–2: 'O my soul, aspire not to immortal life, / But draw strongly from the sources of *mekhanē*'. In French: 'Ô mon âme, cesse d'aspirer à la vie immortelle, / mais puise énergiquement aux sources de la mékhanè'. This translation was inspired by the commentary of Alain Frontier on the translation of Aimé Puech, available at: <<http://www.sitaudis.fr/Incitations/lettre-a-un-ami.php>>.

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List of Sources

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- 2 Escaping the Anthropocene**
Lecture delivered on 19 January 2015, Durham University.
- 3 Symptomatology of the Month of January 2015 in France**
Lecture delivered on 4 June 2015, at the conference, 'Authorizing the Human Person in a Cosmopolitan Age', Notre Dame Global Gateway, Rome.
- 4 Elements of Neganthropology: For an Imagining of the Future of Neurotechnology**
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- 6 Welcome to the Anthropocene: Text for an Encounter between Bernard Stiegler and Peter Sloterdijk**
Text delivered for a public event held on 27 June 2016, Nijmegen.
- 7 Governing Towards the Neganthropocene**
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- 8 Five Theses after Schmitt and Bratton**
Lecture delivered on 21 May 2017, organized by NextLeap, at Centre Pompidou, Paris.
- 9 Capitalism as Epistēmē and Entropocene**
Lecture delivered on 3 June 2017, Nanjing.
- 10 The Organology of Dreams and Arche-Cinema**
Lecture delivered on 12 September 2012, at the 'Film-Philosophy Conference', Queen Mary, University of London. Subsequently published in slightly different versions in *Screening the Past* 32 (2013) and in the *Nordic Journal of Aesthetics* 24 (47) (2015): 7–37. Reprinted here with kind permission.

11 The Writing Screen

Lecture delivered on 30 September 2015, Centro Nacional de Las Artes Cenart, Mexico City.

12 Power, Powerlessness, Thinking and Future

Published in *Los Angeles Review of Books*, 18 October 2015. Original French text published as 'Puissance, impuissance, pensée et avenir', *L'Humanité*, 15 October 2015. Reprinted here with kind permission.

13 What is Called Caring? Thinking Beyond the Anthropocene

This text began as a lecture delivered at the University of California, Santa Barbara, on 11 October 2016, at the invitation of Alley Edlebi. It then went through several iterations, including an intention to include it as an afterword for a republication of the first three volumes of *La Technique et le temps*, until it grew to a length that meant this was no longer feasible. A much shorter version is forthcoming in the journal, *Techné*. Ultimately, it will be transformed into yet another text that will eventually be published in English as *What is Called Caring? Beyond the Entropocene* (Columbia University Press). The text published here is the most complete version of the work *before* the author's decision to undertake this work of major transformation. It should therefore be seen for what it is: a kind of rough draft (à la Marx's *Grundrisse*) that nevertheless remains of intrinsic interest in its own right, and adds significantly to the material offered in the other chapters.



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Bernard Stiegler is the founder and head of the Institut de recherche et d'innovation at the Pompidou Centre, founder of the Ars Industrialis political association and of the pharmakon.fr philosophy school. He is the author of over thirty books including most recently *Automatic Society, Volume 1: The Future of Work* (2017).

Daniel Ross is the author of *Violent Democracy* (2004). He has translated nine books by Bernard Stiegler and, with David Barison, is the co-director of the award-winning documentary about Martin Heidegger, *The Ister*.

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