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The End of the Metaphysics of Being and the Beginning of the Metacosmics of Entropy

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Abstract

Bernard Stiegler has undertaken a renovation of philosophical concepts by taking account of thermodynamic and informational entropy and the counter-entropic tendencies that struggle against them. Such a renovation brings the question of locality into new focus, given the localized character of all such struggles, where this is distributed at various scales from the cellular to the biospheric and technospheric. This paper pursues this question of locality in two parts: the first finds resources for

such a renovation in Empedocles, and notes how these were repressed by Aristotle but resurrected by Sigmund Freud and Friedrich Nietzsche; the second stages a confrontation between Stiegler and Peter Sloterdijk, asking under what conditions the latter's immunological spherology could be brought into Stiegler's project, which we place under the umbrella of what we are proposing to call metacosmics.

Keywords: Bernard Stiegler, Peter Sloterdijk, Empedocles, metaphysics, entropy.

Konec metafizike biti in začetek metakozmike entropije

Povzetek

Bernard Stiegler je filozofske pojme skušal prenoviti z upoštevanjem termodinamične ter informacijske entropije in protientropičnih tendenc, ki se z njima bojujejo. Takšna prenova v ospredje spet prinaša vprašanje lokalnosti, kolikor vse tovrstne boje zaznamuje krajevni značaj, kjer se kažejo na različnih ravneh od celične do biosferne in tehnosferne. Pričujoči članek vprašanje lokalnosti razčlenjuje v dveh delih: prvi del išče vire za takšno prenovo pri Empedoklesu in naznači, kako jih je Aristotel zatajil, a sta jih spet obudila Sigmund Freud in Friedrich Nietzsche; drugi del uprizarja soočenje med Stieglerjem in Petrom Sloterdijkom, pri čemer se sprašuje, pod kakšnimi pogoji je imunološko sferologijo slednjega mogoče spojiti s Stieglerjevim projektom, ki ga uvrščamo pod krovni pojem tistega, kar želimo imenovati metakozmika.

Ključne besede: Bernard Stiegler, Peter Sloterdijk, Empedokles, metafizika, entropija.

Introduction

What follows is an oblique attempt to say something about what locality means in relation to an account of what Bernard Stiegler has called a neganthropology,[1] divided into two halves rather roughly sutured together: the first part asks whether metaphysics could be conceived as the history of a repression of Empedocles starting with Aristotle, risking a new term, "metacosmics," for what could follow this history; the second part asks what conceptual room might be opened up in this future history for an encounter between Stiegler's exorganological neganthropology and Peter Sloterdijk's immunological spherology. The paper arises in part from my longstanding interest in Stiegler's work in general and in his interest in reinscribing philosophical concepts in terms of questions of entropy in particular, in part from what we can loosely call "political" complications emerging from his internation project (which is a renewal in other terms of Marcel Mauss's reflections on the fate of the national and international, but can additionally be conceived as a kind of response to Peter Szendy's call for a new "geopolitics of the sensible;" Szendy 2013, 79), and in part from ongoing email and WeChat discussions I continue to have with Anne Alombert and Ouyang Man. As per usual, all responsibility for any failures of thinking lies with the author, but, beyond this standard disclaimer, is there anything worth saying, by way of setting the scene for a theater of locality, about this context of friendly discussion?

This theatrical situation involving four individuals (not all known to one another) could obviously be conceived in terms of what Gilbert Simondon calls a process of collective individuation, specifically in the sense that four perpetually unfinished psychic individuation processes have been aiming via processes of one or another kind of analysis and synthesis towards a commonality of understanding and reason, an aim that, due to this very singularity, can only ever be asymptotic, the consequence of which is that the collective individuation process, too, remains perpetually unfinished—even if

1 This paper was originally written for an STS conference at Nanjing University at which Bernard Stiegler was one of the keynote speakers.

all these processes are bound one day to be finished off. But these processes can also be described in terms of locality, whereby the locality that I am (or who I am) interacts with those localities who are Bernard, Anne, and Man, through this interaction generating a locality of the collective individuation process operating across the tertiary retentional supports of global digital networks. At the risk of sounding grandiose, we might describe this locality, distributed between Paris, Shanghai, and Melbourne, hence in a geophysical location no smaller than the limits of the biosphere itself, as a kind of cosmological sphere, characterized by a certain warmth, and within which Bernard's position might be conceived as in some way paternal, raising his philosophical progeny, or again, as a saint who inspires by his no doubt imperfect but still rationally miraculous exemplarity.

I deploy these ingratiating metaphors not to flatter but to indicate the psycho-techno-anthropological multidimensionality involved in conceiving locality in terms of cosmologies harboring processes that are less a matter of the harmony of encircling spheres than of inwardly and outwardly spiraling tendencies: there is, after all, no such thing as a truly stable orbit, but only a relationship between gravitational and centrifugal forces; nor, more fundamentally, is there after general relativity any formation of the fabric of spacetime that is not either expanding or contracting (as Alexander Friedmann showed in 1922). Even at the level of the physics of space and time, then, there is no such thing as true stability.

Take "warmth," for example: functionally speaking, the concept of warmth is not physical but biological, naming one of the conditions under which the negentropic processes of biological life can flourish safely, comfortably, and fruitfully, referring to the threshold limits of tolerability of atmospheric temperature (or water temperature for marine or fluvial life), in the struggle against the freezing cold (which indeed and in fact lowers the rate of physical entropy, but also kills the potential for biological life to temporarily thwart the entropic processes against which it struggles). In the case we are describing here, it is not a question of biological or endosomatic life but of noetic or exosomatic life, where "warmth" would thus be a metaphorical name for the psychosocial conditions in which exosomatic life can flourish safely, comfortably, and fruitfully. It is a question of the atmospheric conditions of transindividuation, that is, the conditions of what medium fills the apparent void between brains

and bodies, and gives it its character, an element we might also describe metaphorically in terms of nineteenth-century physics as a kind of *aether*.

This aether, however, is inaccessible to instruments of the Michelson-Morley type. In other words, it is a question of knowing something *after* physics. In regards to this "after physics," it is worth recollecting that Aristotle begins his *Metaphysics* with a declaration tying desire and knowledge together at the heart of the nature (*physei*) of human beings: "All men by nature desire to know." (Aristotle, 980a22) If this is a statement about metaphysics, which might be taken as "psychological" in the sense that it concerns desire, it nevertheless also counts as epistemological to the extent that Aristotle follows it by making a distinction between animals and humans on this score: the knowledge possessed by animals relies upon sensation and memory, and therefore on a *phantasia* that knows little of experience as such, *empeiria*. And this means, says Aristotle at the beginning of *Metaphysics*, that the human desire to know implies that *anthropoi*, that is, *oi thanatoi*, mortals, live by other means than the animals do, and specifically by the means of *tekhnē* and *logos*.

It is not at all difficult to see how this thought of two kinds of knowing possessed by animated beings—those whose *phantasia* is woven from perception and memory, and those who can rely not just on sensation but on the sensational experience that is *empeiria*, a possibility opened up by *tekhnē* and *logos*—is entirely congruent with the sensible and noetic souls described in *De Anima*. In other words, this consideration that opens up the long path of what will be called metaphysics—which attempts to get in view the whole of being, according to Heidegger, and which in modern philosophy becomes the question not of the being who desires to know but of the metaphysics of will—; this consideration begins with the delimitation of different planes of interaction between different kinds of individuals and their milieu, which we can rename in Stieglerian terms as the negentropic or endosomatic plane and the neganthropic or exosomatic plane.

Aristotle, Nietzsche, and Freud as readers of Empedocles

It goes without saying that Aristotle did not himself refer to the negentropic plane, let alone the neganthropic, firstly because Aristotle *also* opens the path

of metaphysics by opposing the fixed sphere of heavenly bodies, which is to say the sphere of timeless "being," with the sublunary world of temporal "becoming" characteristic of life *down here*. From the outset, these beings of *phantasia* that we are calling negentropic, and the beings of *empeiria* that we ourselves are and that we are calling neganthropic, are both *opposed* to a cosmic fixed sphere characterized precisely by the *absence* of any entropic tendency and therefore any struggle against it.

But rather than stopping at the absurdity of this anachronism, what happens if we instead follow this anachronistic line of thinking all the way to the end? Let us abandon well-trodden pathways into the question "what is metaphysics'" and instead pose the question: *what conceptual absences prevented anything resembling negentropy from entering the Aristotelian conceptual universe?* One possible waystation to which such an unconventional path might lead is Aristotle's dismissal of Empedocles, and specifically of two aspects of Empedoclean thought, both of which will be discovered two and a half millennia later, independently, by Nietzsche and by Freud.

When in "Analysis Terminable and Interminable" (1937) Freud discusses the struggle between Love and Strife, he differentiates the "cosmic phantasy" of Empedocles from what he himself seeks, which would be, on the contrary, "biological validity," that is, *empeiria* valid across the negentropic biosphere, yet he acknowledges that the account of *philia* and *neikos* "approximates so closely to the psycho-analytic theory of the drives that we should be tempted to maintain that the two are identical," that is, that these "two fundamental principles," love and strife, amount to what Freud himself calls the drives of life and destruction, love and strife together producing a "process of the universe" conceived as a "continuous, never-ceasing alternation of periods, in which the one or the other […] gain the upper hand" (Freud 1953–1974, vol. 23, 245–246).

And Nietzsche, in his lectures on the "pre-Platonic" philosophers, draws attention to these "drives [that] struggle with each other" and to the way in which this *duplicity* somehow arises from a "*oneness of all living things*" in which what "renders them asunder" somehow can also be what "presses them toward mixture and unification," the result of "desire and aversion" as the "ultimate phenomena of life" (Nietzsche 2001, 115–116).

What both Nietzsche and Freud make clear is that what they see in Empedocles's doctrine of the struggle between *philia* and *neikos* is a genuine theory of tendency and counter-tendency, characterizing the universe insofar as it is the domain of life, in which the counter-tendency somehow emerges from out of the tendency and is locked with it in a spiraling transductive embrace. In *Metaphysics*, however, Aristotle sees in this Empedoclean account only a deficiency of analysis, a failure to make a clean cut between one concept and the other, so that, he says, Empedocles "in many cases […] makes friendship segregate things, and strife aggregate them" (Aristotle, 985a24–25).

Where Freud and Nietzsche see the distinction between these two tendencies compositionally, for Aristotle the problem is the failure to adequately describe an analytical opposition. No doubt we could refer this Aristotelian reduction of the compositional to the oppositional to the replacement of *alētheia* by *orthōtes*, which for Heidegger was the hallmark of the fall into metaphysics. This would be to suggest that Aristotle dismisses Empedocles as lying conceptually on the wrong side of exactitude (whereas we would wish to argue, contra Heidegger, that this exactitude is precisely what opens up the possibility of an account of the composition of tendencies).

But how is it that "mixture and unification" *can* arise from what pulls things apart, which is to say, how can a tendency towards proliferation and conservation of order arise from out of the tendency to disorder? Again, both Nietzsche and Freud note the extraordinary perspicacity of Empedocles in this regard. For Empedocles's solution to this problem is simply to conceive this counter-tendency as an effect generated by chance over time, that is, to conceive the negentropic possibility probabilistically. As Freud notes, in this way Empedocles really anticipates the theory of natural selection in biological evolution: "he also included in his theoretical body of knowledge such modern ideas as the gradual evolution of living creatures, the survival of the fittest and a recognition of the part played by chance (*tukhē*) in that evolution" (Freud 1953–1974, vol. 23, 245).

What Freud finds in Empedocles, in other words, are the same two ideas he learns from Helmholtz (via Brücke): natural selection (that is, Darwin's theory of the basis of endosomatic organogenesis) and entropy (or more specifically, for Freud, Helmholtz's distinction between free and bound energy, which will be

translated into his account of the life and death drives).[2] Much of what Freud refers to as metapsychology can be interpreted as the outcome of an attempt to conceive the fundamental significance of these two ideas for psychic life in a world that was yet to acquire the concept of negentropy as Schrödinger conceived it.

Nietzsche is even clearer that this is a matter of the possibility of order arising from disorder without design, or, in other words, Nietzsche sees that for Empedocles, purposiveness is not the cause but the effect of chance over time. A mere decade after the publication of *The Origin of Species*, Nietzsche, himself only twenty-five years old, describes Empedocles as "the *tragic* philosopher" (Nietzsche 2001, 113), and writes of him as providing these fundamental tenets of what he calls "materialist systems:"

> His main difficulty, however, is to allow the *ordered world* nonetheless to arise from these opposing forces without any purpose, without any mind, and here he is satisfied by the grandiose idea that among countless deformations and limits to life, some purposive and life-enabling forms arise. Here the purposiveness of those that continue to exist is reduced to the continued existence of those who act according to purposes. Materialist systems have never again surrendered these notions. We have here a special connection to Darwinian theory. (116)

In *Physics*, Aristotle evaluates this place of chance and natural selection in Empedocles, which Aristotle describes as the notion that it is merely a "coincident result" that we find ourselves with "the front teeth sharp, fitted for tearing, the molars broad and useful for grinding down the food" (Aristotle, 198b25–28). But he concludes that it is impossible that this could be the outcome of chance or coincidence: such phenomena, he states, are evidently "for the sake of something," and must therefore be taken as proof that "action for an end is present in things which come to be and are by nature" (199a5–8). With this dual Aristotelian dismissal of Empedocles, and specifically of

2 On the first, see Gay 1989, 34–35; on the second, see Laplanche 1976, 118–119.

– the notion of a compositional and transductive relationship of tendency and counter-tendency lying at the origin of the phenomenon of life;

– the notion that this negentropic tendency, giving rise to biological order (organic organisms), can be explained probabilistically (or improbabilistically) rather than in terms of pre-existing final causes;

the path towards a metaphysics of will founded on an oppositional logic was set.

Were things otherwise, had Aristotle not rejected Empedocles and the notion of counter-tendency, had he not rejected the notion that probability and selection could give rise to purposiveness rather than the other way around, what *else* might he have been drawn to conclude about the distinction and relationship between endosomatic beings limited to sensation, memory, and *phantasia*, and exosomatic beings open to *tekhnē*, *logos*, and *empeiria*? Putting such counterfactual questions to one side, *the "end of metaphysics" might as well amount, we are proposing, to the end of the Aristotelian forgetting of Empedocles*, an end that would be philosophically initiated by Nietzsche and Freud but prepared by Clausius, Boltzmann, Helmholtz, and Darwin, in ways that neither Nietzsche nor Freud could fully deal with, even though we might well describe their thinking as never fully successful attempts to think in precisely this direction.

From metaphysics to metacosmics

Such resources already equip us with means sufficient to contest Heidegger's account of the end of metaphysics as well as of Nietzsche's place in that end. We may well see the history of metaphysics in terms of the fate of that "desire to know" with which Aristotle opens *Metaphysics*, and which eventually becomes, in Hegel, "the unity of knowing and willing," and finally becomes, in Nietzsche (according to Heidegger), the "absolute subjectivity of the body; that is, of drives and affects; that is to say, of will to power" (Heidegger 1982, 147). For Heidegger's Nietzsche, then, the final metaphysical reversal consists in folding the rationality of the *animal rationale* into these drives and affects, which Heidegger then presumes to be reducible to the level of *animalitas*.

But if we credit the notion of an end of the Aristotelian forgetting of Empedocles, then what Heidegger himself continues to forget is not *only* that these drives and affects are not at all "animal," neither in Nietzsche nor in Freud, since they are instead what opens onto the very possibility of the desire to know as *logos* and *tekhnē*, but also that all of these, instinct, drive, desire, arise from those highly improbable, if not indeed singular (happening once ever) processes that inaugurate, in turn, negentropy and neganthropy. With this thought, we can take Heidegger's own conclusion regarding the end of metaphysics as itself raw metaphysical material in want of complete reinterpretation:

> The end of metaphysics that is to be thought here is but the beginning of metaphysics' "resurrection" in altered forms; these forms leave to the proper, exhausted history of fundamental metaphysical positions the purely economic role of providing raw materials with which – once they are correspondingly transformed – the world of "knowledge" is built "anew." (148)

What does "raw material" mean here? It is not a matter of those simple elements such as copper or iron, to be dug up, smelted, and shaped into new inorganic but organized forms. Rather, these materials are more like those remnants of ancient life, whose highly complex (highly ordered) organic molecular constituents over eons gradually become the still highly complex hydrocarbons of oil and coal, the complexity of which makes possible their combustibility, that is, their possibility of releasing reserves of potential energy. Or, even more so, like those less ancient organic remnants that have been turned from biomass into necromass, at the microcosmic scale forming the humus, and at the macrocosmic scale the pedosphere, which is to say, the set of complex elemental components forming an essential precondition for the continued existence of the biosphere. In other words, Heidegger's account of the fate of the history of metaphysics should be construed in terms of its constituting what Stiegler calls the *noetic necromass* (cf. Stiegler 2018, 107).

The interpretation of the end of metaphysics becomes a question, then, of *knowing* what is being left behind to form this noetic necromass, and what is

being resurrected from out of this complex humus that is at the same time the transindividual aether that forms the cosmic "element," where this "knowing" must itself pass through the question of a future in which, indeed, the world of knowledge must be built "anew." This raw material does not just consist in a set of hypotheses, arguments, and theorems to be pieced together in new ways like building blocks. For the Heidegger of 1942, it is a matter of seeing that the fate of metaphysics lies in "modern machine technology," and that the question of what comes after that fate (in a lecture course devoted to the complex entanglement of "locality and journeying") is that of the possibility of a new path:

> For our thinking remains everywhere metaphysical, […] because metaphysics first begins to achieve its supreme and utter triumph in our century as modern machine technology. It is a fundamental error to believe that because machines themselves are made out of metal and material, the machine era is "materialistic". Modern machine technology is "spirit", and as such is a decision concerning the actuality of everything actual. […] It is just as childish to wish for a return to previous states of the world as it is to think that human beings could overcome metaphysics by denying it. All that remains is to unconditionally actualize this spirit so that we simultaneously come to know the essence of its truth. […] Yet in truth, this "all that remains" is not the last escape route. Rather, it is the first historical path into the commencements of Western historicality, a path that has not at all been ventured into. (Heidegger 1996, 53–54)[3]

This triumph of metaphysics as the spirit of modern machine technology described by Heidegger in 1942 is what *we* are describing as the fate of metaphysics at the end of the long history of the Aristotelian repression of the Empedoclean account of tendency and counter-tendency. In 1964, Heidegger will describe this in terms of the process by which philosophy "turns into the empirical science of man," and describe how the empirical sciences of man are

3 We must also add that this lecture course is *also* devoted to *rejecting* a "spiritual" notion of art, which would be, precisely, to hold to a metaphysical conception. For this reason, Heidegger's reference to "spirit" here becomes a question, and that question becomes our problem.

in turn bound to succumb to the dictates of cybernetics, by which "scientific truth is equated with the efficiency" of the effects of its application, so that "'Theory' means now: supposition of the categories which are allowed only a cybernetical function […]" (Heidegger 1972, 57–58).

But Heidegger then adds: "[…] but denied any ontological meaning" (58). With this, as with everything he writes, Heidegger shows that he can only partly undo the Aristotelian repression: not because this cybernetical function *has* an ontological meaning but because Heidegger can never expose his notion of being to the tragic notion of tendency and counter-tendency unearthed in the wake of the second law of thermodynamics by Nietzsche and Freud. What Heidegger cannot see is that the *Da* of Dasein, and the fundamental *locality* of all knowledge and truth, arises from the fact that Dasein, the noetic soul, is engaged in a counter-entropic struggle not just through biological evolution but through what Alfred Lotka calls "exosomatic evolution" (Lotka 1945, 188), operating according to criteria that are always thermodynamically local and informationally idiomatic. To interpret this fate of knowledge, truth, and philosophy under cybernetics beyond metaphysics, therefore, is to interpret what this transformation of "language into an exchange of news," of the arts into "regulated-regulating instruments of information," and of the "ontologies of the various regions of beings (nature, history, law, art)" into the "operational and model character of representational-calculative thinking" (Heidegger 1972, 58–59)—it is to interpret what all of this means in terms of the irreducibly local struggle against both thermodynamic and informational entropy.

Our contention is that, if this is indeed a question premised on the necessity of knowing the future of knowledge itself, which means *building* that future—where this "building," however, is not a matter of constructing it from building blocks but rather concerns a complete reinvention (a "transformation in our ways of thinking and experiencing, one that concerns being in its entirety;" Heidegger 1996, 166)—, then it must also pass through the formulation of that challenge that is to be found in the statement with which Freud concluded his treatment of Empedocles: "no one can foresee in what guise the nucleus of truth contained in the theory of Empedocles will present itself to later understanding" (Freud, 1953–1974, vol. 23, 247). Similarly, François Jacob ends *The Logic of Life* by noting that the scientific understanding of

endosomatic and exosomatic systems and processes might today be seen in terms of the cybernetical functions of "messages, codes and information," but that tomorrow's analysis may well "reconstitute them in a new space" (Jacob 1982, 324).

Such professions amount to versions of the Simondonian epistemological dictum that individuation ultimately remains unknowable because the only way of pursuing this knowledge is by individuating. The future guise of the Empedoclean "cosmic phantasy," after the end of metaphysics, corresponds to a resurrection that leaves the physics of metaphysics behind in an act of anamnesic reinitiation that we are proposing to call the beginning of *metacosmics*, which would be less an anti-physics than an *a*-physics in the sense that Bataille refers to atheology (defined for instance as "the science of the death or destruction of God;" Bataille 2001, 166).

Such a metacosmics would delimit the conditions under which it would be possible to inaugurate what I have elsewhere called a "general theory of entropy," whose generality would imply the a-systematicity of Bataille's general economy more than Einstein's general relativity. And it would thus aim to think, create, and take care of the sur-real cosmology whose prospects are first opened up in Stiegler's concepts of anthropy, neganthropy, neganthropology, Entropocene, and Neganthropocene. It becomes a question, then, of meeting the obligation of justifying the necessity of this new term, "metacosmics," not least in the face of the risks and dangers it may also contain of falling *back* into metaphysics: our suggestion is that, if there is such a justification, it lies in the question and the problem of neganthropological locality.

Troubles of belonging

If locality is a question, it is firstly because we see the evidence of the problem of locality all about us: Peter Sloterdijk describes the twentieth century as "an era of political psychoses at whose core emerge […] troubles of belonging" (Sloterdijk 2011, 187). From his spherological viewpoint, he sees such troubles as symptoms of no longer knowing who one is or who others are, since such forms of knowledge arise only "where a sufficient number of

good primary spheres blossom" (187), or to put it another way, where there are what Donald Winnicott calls transitional spaces in which what Stiegler calls processes of transindividuation can flourish neganthropically, that is, enchant worlds. The destruction of this kind of knowledge of who one is and who others are, which is to say (in Stiegler's terms) its proletarianization, leads Sloterdijk to conceive modern nations as "asylums," spaces of protection for the uprooted.

Today, however, "the uprooted" refers not just to the asylum *seeker* but to the local and the indigenous: we are all in want of asylum inasmuch as we are in want of being a *we*, for lack of the knowledge of *how* to form any such *we*, that is, any locality, in a twentieth century in which individuals are, as Sloterdijk puts it, "driven to undertake reformattings of the world […] without first developing the psychic means to enable them to get acclimatized and familiarized with their new conditions of life" (187). In such a situation, according to Sloterdijk, "national asylums" possess only the limited function of entertaining "the necessary illusion of anchorage, of territorial immunity, of solidary integration, and wherever this asylum function does not operate, violence erupts" (189).

One question we might address to Sloterdijk is whether *nations* can any longer have even *this* minimal asylum function, and what *exactly* "territorial" means in the age of global networks. But if this serves to indicate the necessity of a gesture akin to Mauss's attempt to overcome the division between the national and the international through the invention of a new process, nevertheless we can but agree with Sloterdijk, when he writes:

> Even a left-wing cultural politics must take account of it, by assisting local impulses, or spherical needs, to find non-reactionary solutions. If it fails to fulfil this social and ecological mission, explosions will never fail to materialize. (190)

Almost always, such "troubles of belonging" are conceived in terms of a problematics of identity and difference, or same and other. But these *bipolar* forms of conceiving such disturbances and disruptions almost always prove to be anything but transductive. And these bipolar forms of

conceiving such troubles thus almost always end up designating enemies and scapegoats.[4]

We should instead conceive such troubles of belonging, troubles brought by the proletarianization of the knowledge of the *I* and the *we*, neither simply as symptoms of a deficiency of identity nor of a deficiency of difference. Sloterdijk indicates this necessity by suggesting that every human attempt to live together is "made of continuities and discontinuities," contrary, he argues, to "the attempt to invert [this formula] and prop thought up essentially on discontinuities, as certain types of thought that stem from philosophies of difference suggest" (200–201). What results is an endless unwinnable war of pseudo-philosophies, perpetually "choosing diversity over normativity" but in the same stroke wanting to "choose unity over division," and on and on, as if the struggle between tendencies could ever be reduced to such "choices," a war that is waged on the terrain of culture but that can never succeed in perceiving the character or causes *of the cultural aether itself*, an aether amounting to a rich but now depleted noetic atmosphere emanating from the rich but now depleted soil of the noetic necromass.

It would be false to conclude that so-called "philosophies of difference" are therefore outmoded, but we can nevertheless recognize that what remains to be found or re-found (to paraphrase Freud) are the terms with which to transform the relationships between identity and difference, or same and other, into relationships that are not just polar but transductive, or to find or re-find the terms with which to describe the finitude and openness of localities. Such terms will lead to a philosophy neither of identity nor of difference, but of tension and resonance, and of the perpetual possibility of their being lost.

4 What constitutes the bipolarity of a magnet? On the one hand, this is an informational relationship for the observer, in the sense that knowing the polarity of one end of a magnet directly *correlates* to information about the polarity at the other end. But this dependence does not amount to *interdependence*, which is to say transduction in Simondon's sense, and for the same reason that the growth of the crystal does not truly rise to the level of an individuation process or a negentropic process: because the correlations entailed by this "relative information" are not functions that strongly correlate the parts to the whole, thereby contributing to its metastable persistence, unlike the *mutual interdependence* involved in the recursive loops and functional relationships of negentropic life.

There is more than one place to look in order to seek such a form of thinking. Anne Alombert, for example, has recently shown in a lecture given at Sussex that tension between individual and milieu is the very condition of the development of knowledge, and that the loss of knowledge induced by algorithmic performativity amounts to the collapse of that tension:

> Indeed, the totally automated, self-regulated, and adaptive infrastructures which can be applied everywhere and are supposed to eliminate any kind of tension between individuals and their environments in fact prevent these individuals from encountering any specific tensions or from overcoming them through the invention of new local, collective and singular knowledge. As Canguilhem has shown, it is because tensions appear in their relation to their milieu that human living beings develop knowledge—knowing how to do, how to live and how to theorize—all of which are ways of resolving the problems encountered in the relationship with their milieu (technical shocks or social tensions). (Alombert 2019)

Here, it would be necessary to enter further into the relationship between these (technical) shocks and (social) tensions. As Alombert argues, high-speed algorithmic performativity amounts to an elimination of the *tension* between organism and milieu that alone produces the knowledge that, as she puts it, enables *resolution* of the problems between the individual and its environment. It would then be a matter of articulating this thought with Simondon's attempt to reconceptualize information in a non-quantitative fashion, which, as Yuk Hui has shown, is based on conceiving information as a tension, within a cybernetic system, between a signal and a receiver, and where the production of significance amounts to the *resolution* of this tension (cf. Hui 2015), in turn relating this to Gilbert Simondon's notions of associated milieu and internal resonance or to Giuseppe Longo's notion of the bio-resonance strongly correlating the parts and the whole of anti-entropic systems. The basis of such articulations could only be that the significance to which the resolution of informational tension amounts equates to knowledge as a function of the relationship between organism and

milieu (and then a matter of knowing to what extent this articulated account is or is not mathematizable).

But what we must then also say is that this relationship between organism and milieu is itself a relationship between two scales of cosmic sphere. What does it mean to refer to different "scales of cosmic sphere"? Bernard Stiegler has in recent years been engaged in addressing this question, and he does so, in part, precisely by articulating Canguilhem's concern with the technical form of life (as the noetic tension between the individual and the milieu) with Simondon's concern with rethinking information and its theory, in addition to retaking Derrida's notion of *différance* as distinguishable into two forms of the struggle against entropy (negentropic and neganthropic), on this basis reinterpreting the work of Whitehead (on the function of reason), Lotka (on exosomatization), and Winnicott (on transitional space and the transitional object) to outline a "hyper-materialist epistemology," in which knowledge and the *desire* to know are construed as functions and faculties of a *sur-real cosmology*. In such a cosmology, we could say, the tension and resonance holding parts and whole within a metastable cohesion arise from the aesthetic *or cosmetic* sphere, conceived in a general sense as the socialization of desire, but where this requires profound analysis and interpretation (beyond the scope of this paper).

Spherology as a pharmacology?

I would now like to give a few indications about how and why Sloterdijk's spherological project might *also* be roped in to this metacosmic project. For this preliminary foray, scouting this foreign but not completely unfriendly territory (or perhaps it is better to say: the territory of our best frenemy), some precautions with respect to Sloterdijk may prove necessary, as might some modifications—or a thoroughgoing critique. Sloterdijk does not shy away from a rather wild form of "exaggerated" thinking that can be both a virtue and a vice, making it a delicate matter to pick out those kernels with the potential to cross-fertilize with Stiegler's metacosmic neganthropology.

A fundamental starting point for comparing their work would be to acknowledge the significant overlap between Stiegler and Sloterdijk in terms of their conception of the complicated origin of the kinds of beings that we

ourselves are. On the one hand, Stiegler's notion of an originary default at the onset of technical life (or hominization) involves a fault that would be anything but a lack because it is the opening of the excessive character of noetic souls that would also be *exclamatory* souls:

> This becoming-symbolic as *logos*, which only is in the course of its being ex-pressed, is what I call an *ex-clamation*: the *noetic* experience of the sensible is *exclamatory*. It exclaims itself before the sensible insofar as it is *sensational*, that is, experience of a *singularity* that is *incommensurable*, and *always in excess*. The exclamatory soul, that is, sensational and not only sensitive, *enlarges* its sense by exclaiming it symbolically. (Stiegler 2011, 133)

On the other hand, Sloterdijk undertakes a critique of Arnold Gehlen's notion that we begin as neotenic, helpless "deficient beings," arguing that this fiction conceals the fact that our initial openness means that:

> *Homo sapiens* is a basally pampered, polymorphically luxuriating, multiply improvable intermediate being whose formation resulted from the combined action of genetic and symbolic-technical forces. (Sloterdijk 2016b, 657–658)

In other words, both Sloterdijk and Stiegler offer accounts of the origin of the distinction of the noetic soul as a being of excess made possible by and making possible another kind of evolution beyond the biological: that of technical beings who are as such irreducibly excessive and symbolic.

In *Neither Sun Nor Death*, Sloterdijk describes the distinction between these two kinds of evolution—or two kinds of *différance*—in terms of a difference between two kinds of "special machines:" firstly, "autoplastic or autopoetic" "living machines," and then that second evolutionary process through which "man became more than a living machine, but also a sort of machine of the spirit, insofar as he has formed the possibility, in thought, of thinking and of letting the world emerge as world" (Sloterdijk 2011, 115–116). If Sloterdijk is describing a double emergence that seems to correspond to the advent of endosomatization and then

exosomatization, then this "coming-into-the-world" (emphasizing "beginnings more than ends") that is also the Heideggerian emergence of the world-as-world (and ending with "modern machine technology *as* spirit") also corresponds to the negentropogenesis and neganthropogenesis that each individual must traverse as a kind of double birth, which Sloterdijk describes as follows:

> Because humans must not only be liberated from a mother, they also find themselves confronted with the challenge of entering into the "house of Being". Coming-into-the-world is the philosophical formula for a biological event charged with an ontological character. (175)

Clearly there is something quasi-Heideggerian and something quasi-Winnicottian going on in this account: the entrance into world-as-world corresponds to a process of substitution for the first sphere, that is, the maternal sphere. If Sloterdijk holds to ontological rather than organological terminology, or, in other words, if he tends not to see this double sense of coming-into-the-world as the doubling of the endosomatic by the exosomatic, he nevertheless also does stress Heidegger's understanding that "the question of Being emerges through questions of power and of technology" (118). Sloterdijk emphasizes the continuity of his thinking with Heidegger's non-physical conception of space, which he says "broke the habit that consists in interpreting being-in from the angle of everyday physics, and showed that human being-in-something […] must be interpreted as a standing-outside, an ecstatic positionality, or a being-held-on-the-outside" (176).

This being-in in the form of an ecstatic positionality is also expressed as a kind of spatial *différance* (though he does not use this latter term) that opens up the possibility of a locality that is not just a space:

> From the outset, what it [the sphere] thus expresses is the idea that all inhabiting implies a milieu of transference—or again, to employ Deleuze and Guattari's jargon, a deterritorialization within a subsequent reterritorialization. One lives to the extent that one projects an elsewhere into a here. There is no place without a here-there difference. (249)

This Heideggerian-seeming *différance* of here and there, which opens up the possibility of a place and the whole proto-pharmacology of locality and journeying that occupies Heidegger in 1942, is then extended out to a Winnicottian-seeming liberation from and by the mother (thus opening up a "milieu of transference"), but where, as in Stiegler's extension of the transitional object and transitional space beyond the confines of the good-enough mother, Sloterdijk turns this into a socio-technological pharmacology:

> My theory of space formation in modernity is backed by the observation that, in the process of civilization, interiority gets replaced by exteriority. Otherwise said, it belongs to the essence of socio-technology to play with maternal capacities in non-maternal media. Modernity consists in finding technological substitutes for maternity, in every sense of the word. […] Mothers, the bio-patrons, get replaced by artificial patronage systems. (215)

It would no doubt be possible to interpret this last statement metaphysically or non-pharmacologically,[5] to the extent that it seems open to the possibility of being understood as constructing an *opposition* between bio-maternity and artificial patronage in non-maternal media. But it is also possible to understand this as precisely a description of the changing relationship to the external milieu that occurs when genetic forces are increasingly replaced by symbolic-technical forces, leading in "modernity" to a formation of space that is no longer just technical but techno-logical, and industrial—at every level of "reproduction." Hence, we might also be tempted to conclude that Sloterdijk's general account of reproduction implies a form of thinking that *exceeds* metaphysics while also responding to the imperative to overcome the division between the scientific and the philosophical in the direction of knowledge built "anew:"

5 Anne Alombert asked me this question (in correspondence after this lecture was delivered) by wondering if Sloterdijk's account of "spherization" is equally an account of "de-spherization." One way of approaching this question could be to ask what Sloterdijk means when he describes "all inhabiting" as implying "a deterritorialization within a subsequent reterritorialization."

> It is always necessary to question anew the phenomenon of how it is that life organizes its continuity. With which advanced fortifications, with which war-machines […]? How do living systems manage to reproduce themselves? How do they make themselves a future? In this, philosophy converges with systemic concerns, and it does so, in the first place, under metabiological auspices. (221)

For Sloterdijk, such auspices mean that the

> […] anthropotechnical theory of space in contradistinction to that of physics resides in the fact that I define the container as autogenous, that is, as a surreal form of space, wherein several selves together constitute something that I call a sphere. This, precisely, is the space of psychic resonance. (222–223)

That these metabiological auspices imply an anthropotechnical account of the pharmacological character of noesis, and that, in the Anthropocene, this also has fundamental implications for a pharmacology of locality at the scale of the biosphere, is obvious from the following passage:

> I start from a strong ontological thesis: intelligence exists. This leads to a strong ethical thesis: there is a positive correlation between intelligence and the will to self-preservation. Since Adorno, we have known that this correlation can be questioned—that was the most promising idea of older Critical Theory. It started from the observation that intelligence can go in the wrong direction and confuse self-destruction with self-preservation. […] What is on the agenda now is an affirmative theory of global co-immunity. It is the foundation of, and orientation for, the many and varied practices of shared survival. (Sloterdijk 2016a, 230)

Towards a neganthropological immunology

Sloterdijk's conception of spherological space, then, involves what he calls a "constitutive surrealism," an "original spatialization" that is also a "perpetual space-delusion" arising from the fact that human existence is a co-existence (cf.

Sloterdijk 2011, 260). In other words, here-there *différance* structures the noetic production of knowledge and reason as *functions* of neganthropic life that always occupies spheres that are themselves always delusional, that is, noetic dreams of one or another world-as-world, worlds whose fabric is conditioned by the mediating tension and resonance of an aesthetic atmospherics. It is for this reason that Sloterdijk refers to immunity, as can be seen in his attitude to the history of metaphysics:

> I read classical metaphysics as a library of effective propositions about the globality of the world, where world is construed as an immune system. Ontology is therefore the first immunology. (181)

> [C]lassical philosophy's premises were the premises of a theory of the space of shelter, and therefore of a cosmological and theological spherology, or even better of a sphero-immunology. (210)

Immunity is no doubt one of those dangerous "organic" metaphors upon which it is so easy and so common to fall back in attempts to conceive locality, whether pharmacologically or otherwise. But if it is true both that metaphors are *always* dangerous and that they are *unavoidable* (that metaphors themselves are pharmacological, in other words), then the responsibility falls to us to use metaphors *knowledgeably* (or quasi-causally). What would it take for the biological metaphor of immunity, and the pharmacology of its always-threatening auto-immunity, to be *worth the risk* and to make it knowledgeably serve a pharmacology of locality?

If the pharmacological character of the *pharmakon* ultimately stems from the anthropic and neganthropic *extension* (by other means) of the negentropic struggle against entropy, in the sense that it concerns the struggle against the elimination of improbabilities and the reduction of the improbable to the probable and the average, where these struggles involve not just life but the articulation of the living with the non-living, and if this question of probabilities and the improbable is always a matter of the conservation of the past that opens up the possibility of improbable and incalculable futures, then we are saying that, ultimately, the pharmacological character of the *pharmakon*

is *always* a question of ordered, retentional systems that open up protentional possibilities, possibilities of the transformation and diversification of order—new noetic dreams. From this, it follows that conceiving immunity beyond the danger of biological metaphoricity is a matter of reconceiving it in terms of retentionality. It is a matter of writing it as the *immuno-logical* with a hyphen, just as Stiegler refers to the *techno-logical* as the composition of *tekhnē* and *logos* that opens up the possibility of what Heidegger in 1942 calls the spirit of modern machine technology.

The possibility of such an *immuno-logical* account can be opened up by reflecting on the "informational" mechanism of the biological immune function. Jean Claude Ameisen's account of the "sculpture of the living" (Ameisen 2003), which Francesco Vitale enlists in the service of elaborating a Derridean "biodeconstruction" (Vitale 2018), makes clear that we have good reason to conclude that the immune system is nothing but a retentional system *separate* from the memory of the nervous system, an endosomatic system devoted to endosomatic memory (whereas the nervous system of human beings is an exosomatized system inseparable from exosomatic memory). It is only *through* this retention of *preceding but necessary* exposures to immunological risk that the immune system can function. In other words, the immune system is nothing more than a somatic system regulating the here-there difference between the endo- and the exo-, prone to auto-immune disorderliness due precisely to retentional and protentional errors and mishaps in the struggle to maintain improbable negentropy. (All this merits a much more extended treatment.)

What would such a thought imply for a social psychology appropriate to any neganthropological approach? First, it implies that any account of the pharmacology of the "logic" of immunity and auto-immunity in exosomatization cannot avoid the question of the *logos* and more specifically of the "history" of tertiary retention. Second, it implies that, for this reason, it cannot avoid the question of *grammatization*, which is also to say, of proletarianization. But the latter should then be construed as the auto-immune tendency that destroys knowledge and leads to the regression of the sensational soul as it succumbs to the sensational*ist* tendencies that engender the panic behavior of crowds that lies behind so many contemporary troubles of belonging (cf. Stiegler 2011, 134). *Can we therefore conclude that what is*

missing from Sloterdijk's immunological spherology is a systematic account of grammatization?

As for a "systematic account," perhaps this is indeed missing, but, somewhat surprisingly, something like grammatization is indeed discernible in his text (even if only "between the lines" in the sense that no major theses are drawn from it), and specifically in the way Sloterdijk treats psychoanalysis, which is to say the social psychology of desire. Having noted that "linear mentality […] is a consequence of the letterpress [that] follows from the one-sidedness engendered by alphabetization" (266), having noted that with the invention of the phonetic alphabet, "the operative handling and observation of being takes a massive leap forward" (270–271) because the "Greek alphabet is the first triumph of analysis," having noted that "with analytic success an interest for synthesis also comes to the fore, that is to say, the possibility […] to write new things," he concludes that analysis "*qua* process of elementarization is the preschool of synthesis" (271).

What Sloterdijk means by elementarization is more or less what Stiegler, reading Auroux, means by discretization: turning a temporal flow into discrete spatial elements that can be analyzed and reproduced. While Sloterdijk doesn't seem to see how this question of elementarization is *also* that of the grammatization of *gesture* that lies behind the industrial revolution (which is Stiegler's stroke of genius, even if it comes from rereadings of Auroux, Leroi-Gourhan, Simondon, and the *Grundrisse*), which is to say behind what Sloterdijk calls "modernity" and what has more recently come to be called the Anthropocene, he does acknowledge that the nineteenth century was "shot through" with analysis "at the level of empiricism," based on "the elementarization of the various domains of being" (271–272).

What is odd is that this whole account is merely a prelude to his assessment of psychoanalysis qua analysis:

> But behind the pathos of professions of faith in the primacy of analysis what is dissimulated is an avowal of theoretical perplexity, because what psychoanalysis thereby admits, at bottom, is that its discipline has not accomplished any convincing elementarization. (274–275)

Now, we may well have a sense of what he means, if he is suggesting that, despite *The Interpretation of Dreams*, Freud could never really "discretize" the continuum of dreaming and the fluxes and flows of the unconscious mind, in lieu of which it all too easily succumbs to a kind of esoteric priestliness. But if this is the case, we first have to ask: is Sloterdijk making the error of imagining that in the systems and structures of desire, the elementary is necessarily *simple*, or is he ascribing this conceptual error to psychoanalysis itself?

However that stands, it is surely impossible, here, to avoid the significance of Freud's nephew, Edward Bernays, or more particularly of all those who followed in his wake in the technosciences and pseudo-sciences of marketing. Surely Bernays and his heirs have been engaged in nothing other than an elementarization of dreams and desires, in order to produce a wholly unholy (wholly calculable, and hence unpriestly) "psycho"-"analysis," the better to synthesize artificial dreams, an elementarization now carried out algorithmically on "big data." Is this not precisely a question of the auto-immuno-logical production of what Sloterdijk calls "exoneuroses" (84), generated through those non-maternal media that are socio-technologies (now mostly via "social media" that are in fact anti-social)? But to really answer the question of Sloterdijk's position, it would be necessary to properly study the third volume of his *Spheres*, on *Foams*, that is, on the infinitely-fine particularization of globally networked microspheres (which I have yet to do).

It is a question, here, of producing the outlines of a socio-technical psychology for any possible neganthropology. In addition to the seeming deficiency of Sloterdijk's account of the fate of what Stiegler calls grammatization, we can also wonder about the adequacy of his account of the maternal relationship as the "first sphere." That this leads Sloterdijk to a several-hundred-page account of intra-uterine existence gives the reader a true sense of the risks entailed by his celebration of a "philosophy of exaggeration." But this, too, is potentially ameliorable, for instance by referring to the first chapter of *Life and Death in Psychoanalysis*,[6] where Jean Laplanche carefully traces the relationship between

6 Quite strangely, Derrida "presumes" this book to have been read by readers of "To Speculate – on 'Freud'," while himself ignoring Laplanche's account of Freud's translations and mis-translations of the Helmholtzian thermodynamics of entropy into the terms of the compositional topology of the life drive and the death drive (cf. Derrida 1987, 280 n. 15).

instinct and drive in Freud, and does so by drawing out its four constituent *elements* (but which he never connects to the four causes in Aristotle, though this would seem possible). Laplanche also suggests a kind of analogy between (1) instinct and wanting milk, (2) drive and sucking the nipple, and (3) desire and sucking the thumb (or, *supplementing* these elements, sucking the artificial dummy). In other words, more may remain to be said about the role of the maternal in any such socio-technical psychology, which will be *both closer to* and *more distant from* biology than any existing psychology (or, for that matter, any existing anthropology).

Leaving Laplanche to one side, one might say, more programmatically, that Sloterdijk is arguing that what Freud called metapsychology must be supplemented and deepened with a metabiology that would also be a metacosmology. To this we should also add, *conversely*, that what Vitale calls biodeconstruction must be supplemented with a psychodeconstruction that would also be a cosmodeconstruction: our argument is that this is the terrain on which a general theory of entropy, a neganthropology, an exorganology, and a metacosmics must be played out.

If we are willing to indulge the possibility of believing in such a metacosmic project, it in no way involves delineating a "domain of being" but rather concerns the invention of a highly improbable future. We might conceive this future in terms of what the thinker whom Nietzsche in 1861 described as "my favourite poet" (Nietzsche 1996, 3), that is, Friedrich Hölderlin—Nietzsche observing in the same letter that Hölderlin "hated in Germans the mere specialist, the philistine" (4), a hatred of philistinism that we can see clearly expressed in the *Trauerspiel* concerning the suicide of Empedocles at Mount Etna—, has Empedocles say in the first version of this play (later filmed by Straub and Huillet): there, Empedocles expresses the hope that a path can be opened up, a resurrection producing new, highly improbable states of a cosmos in which "the green of earth will glisten once again" (Hölderlin 2009, 91). It is a matter of hearing in this hope for a glistening green the possibility of finding a way of caring not just for our biospheric negentropic fate, but also for our psychospheric and noospheric neganthropic fate, and a renewed capacity for receiving a sensational "glistening" that will open new exclamatory paths. Without a path towards such a multidimensional cosmic and cosmetic resurrection, the cellular

suicide that Ameisen sees as opening new voids in the sculpture of the living via the genetic milieu, and the anaphylactic endosomatic suicide that can occur when the retentional systems of the immune system overreact, and the psychic auto-immunity that can lead the thinker to abandon his own noetic gardening and instead contemplate the void of the volcano, and the civilizational suicide that Toynbee sees as inherent to what Valéry already saw as the mortal character of civilizations, will find a whole new counterpart in the technospheric suicide brought about by the pharmacological character of locality, now operated by automated tertiary retentional systems distributed at the macrocosmic level of the biosphere, destroying not just knowledge but also the desire to know.

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