Transformations

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Transformation as an Ontological Imperative: The [Human] Future According to Bernard Stiegler

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> 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. And in day-to-day technical reality, we cannot spontaneously distinguish the long-term processes of transformation from spectacular but fleeting technical innovations.
>
> — Bernard Stiegler, *Technics and Time 1* [1]

I. Disenchantment/Re-enchantment Bernard Stiegler's resonant introduction to the theme of technics and transformation, from the second paragraph of *Technics and Time 1*, provides a good frame for the response Stiegler makes to both the confused obfuscation and the positive drive of technics and transformation, as central concepts underlying all of his thought and writing, from *Technics and Time 1* (1994/1998) through his most recent analyses of education, "telecracy," democracy, industry, etc., whether he is addressing the question of technics directly or tangentially. What is being "profoundly transformed," according to Stiegler, is nothing less that the nature of the human itself, by which Stiegler does not mean some traditional notion of "human nature": since for Stiegler technics and technology are *temporally prior* to "the human" (and obviously, therefore, to any "humanism" [2]) our need to attempt to "understand the process of technical evolution" is a vitally important ontological (and existential) imperative, an "anthropological technics" that transforms both customary human/animal anthropology and "man the tool-maker" as well. Stiegler erases the magical thinking of a non-technical pre-human, thus transforming the nature of what is "proper to the human" [3] (the technical) and demonstrating a new sense of the "non-anthropologic" (Barthélémy). The following will range across a number of Stiegler's works and concepts in order both to help focus them and to suggest their truly radical – transformative – nature.

How, then, are the two central "gifts" of the human, as laid out by Descartes – understanding and will – treated in Stiegler's transformative discourse? The chimerical layering of senses through which we understand (if we do) both the volition implied in proper decision-making, and simultaneously the fact that such volition (based on an X factor that Stiegler says we *feel* or *sense* without knowing it) is increasingly escaping us, structures the groundwork for our potential collective lack of understanding of the différance [4] insinuated into the interstices between "long-term processes of transformation," what Stiegler has more recently called the "long circuits of attention," borrowing and dramatically up-dating from Kant, through which humans have the opportunity to reach the transindividuation [5] through which we/they become "responsible," and the "spectacular innovations" technics and its processes continuously emit, dazzling us even

while they race further and further ahead of our abilities to understand, much less to respond adequately; such innovations are "fleeting" in a variety of senses. This is the critical dilemma of our time, Stiegler says, in both sense of the phrase – its ontological imperative: the growing gap between long-circuit maturation and short-circuited attention defines a transformed relationship between technics/technology and its *product*, the human. It is no longer a question, as it was in the 1950's, of the computing machine's "danger" or "threat" to the human, since the human *is* and has always been, according to Stiegler, machinic in just the way a Descartes or Heidegger would be most unhappy to hear.

With this metalepsis at the center of his critique, Stiegler proceeds to analyze the "battle for intelligence" [6] that, though it has always been a part of the human/technics interface, has now become more central than ever. Stiegler's effort is and has always been, as he says above, to help us understand the transformations we *under*go in both the short and the long term, always within the context of technics. In so doing Stiegler focuses on thresholds and transformation; this has become increasingly clear through his most recently-published works, which provide echoes of both earlier and current themes [7] that have galvanized Stiegler's interrogations of the current state of Western culture, education, and (more broadly) culture in general. Never shying away from the most fundamental questions addressed by contemporary cultural change in a wide variety of disciplines, Stiegler (and his group in Paris, *Ars Industrialis* [8]) ranges across disciplines from sociology and anthropology to philosophy, linguistics, politics, and history in order to help us grasp the depth and breadth of the crisis he says we face at the beginning of the 21st century. In *Technics and Time 2*, Stiegler focuses on a very specific sense of disorientation, which emerges as a fundamental theme pervading his thought. Disorientation in Stiegler's sense has to do with co-ordinates, that is, with *location* and *dislocation,* within the re-conceived world of the technical. Since Stiegler is working through a critical ontological moment, this dis/location is not physical nor geographical but *appears* as phenomenological, relating to one's, and our, locatedness in our psychic world, a world of experience and things; properly understood, however, this seemingly phenomenological network covers a "deeper" ontological predicament. Since for Stiegler "the human" is itself technics, he works through the various ways in which the discovery of this seemingly counter-intuitive – and certainly counter-humanist – interpretation of the human amounts to a dis-enchantment (what he calls in *La Technique et le temps 3* [9] a "malaise"), but which has much wider implications. Stiegler's case is that our multiple misunderstandings of technics and of ourselves as technical beings in an increasingly hyper-technological world compounded by hyper-consumption (made possible by hyper-technology) can or could result not in the so-called end of history, a steady state of human achievement, but rather the opposite, the end of the human, not as a "reversion" to the bestial or animalistic but to a condition to which other animals have no access, which Stiegler calls the "unhuman"; human being is, then, the "not-unhuman." The human, as we are conditioned to consider it, is an "enchantment"; thus alienation, anomie, attention disorders, and the loss of "independent thought" all transform into a radical dis-enchantment.

But are these the only choices for us: enchantment or dis-enchantment? Stiegler's work stands as a potential corrective to such a choice, and to what would be its inevitable result: dis-enchantment. Stiegler's effort is massive, and takes place on two planes: that of philosophy itself (e.g. the *Technics and Time* series) and that of less abstract social theory (e.g. *Taking Care* and other recent works dealing directly with global technological and political conditions needing close, immediate attention). Stiegler juxtaposes these two levels of discourse in order to show how the disenchantment/reenchantment diad is at work in both popular and academic culture. He is virtually unique in doing so, as Robert Maggiori points out, operating in both the academic and the directly political spheres, the two arenas proper to the discussion of this orientation. *Dis*orientation can be re-oriented, can re-gain its bearings, Stiegler declares, as calendarity and a proper orthography, through awareness, attention, and action. Stiegler turns for his starting point for his most recent work to the manifestly political, the 2005 MEDEF (*Mouvement des entreprises de France*) convention, whose central theme was "*Le réenchantement du monde* [*The Reenchantment of*

the World]," and whose immediate goal was the re-direction of European Union funding toward research and development "in the domain of cognitive technologies." [10] The MEDEF's desire was to re-focus energies and finances on the future of society and culture, but more specifically on the future of (hyper-)capitalism itself, envisioning what Stiegler calls "a reversal of the value of the mind against industrial populism" (13), the latter understood as an attempt at the reification of mass-culture and the creation of universal markets "creating the conditions of an industrial production of *consciousness without mind . . .* of brain without consciousness." Stiegler's critique of the "programming industries," [11] whose interest is not merely mind-control in the Foucauldian sense (*les sociétés de contrôle*) but mind-destruction, is the case he takes up in *Taking Care*, taking the MEDEF's word, enchantment, and paying attention not to a current dis-enchantment but to a possible re-enchantment: making the world safe for, and *through*, (true) democracy. [12] However, such a re-enchantment is not possible without a clear understanding of (the technics of) consciousness, and the ways in which consciousness is "captured," controlled, and debased by the programming industries. Stiegler clarifies this in the very first footnote in *Taking Care*:

> What I call "consciousness" here is not a vaporous adjunct to the brain like a saint's halo or an *aura* – a supplement to the mind having fallen from who knows where. . . . "Consciousness," [is] the part *accessible to understanding* of the projections that construct psychic machinery through intermediation by the organism we call the brain. . . . [Yet] the brain is but one apparatus in a circuit of apparatuses through which the psychic connects with the social. (*Taking Care* 10-11)

Consciousness is thus a network of inter-connected and multi-layered circuitry, ranging from the unconscious to the history – the memory – of "culture itself" (what Stiegler calls "tertiary retentions"). But consciousness in this sense is not only dynamic but fundamentally *transformative*: as circuitry (and Stiegler does not mean this as a metaphor) consciousness "is what inscribes the psychic in the social *through* technics, it is also . . . how psychic life is immediately seized in a process of sublimation (of trans-formation)" (13). Note the order of things here: consciousness as technics "inscribes" the psychic in the social using the tools of technics, in so doing privileging not the psychic but the technical and its "retentional means"; technics transforms "psychic life" through the sublimation – a process of forgetting – of the fact that what is forgotten is precisely this transformation. Indeed, the leitmotif of Stiegler's work is this possibility of, this chance for, trans-formation: the forming and re-forming of consciousness, as an endless process only certain results of which can properly be called human.

This is not *just* a new kind of sociology, it is indeed a new kind of ontology, embedded within a new kind of phenomenology, a transformation of the phenomenological tradition from Descartes to Derrida. More specitifically, having worked through a critique of Husserl and Heidegger in *Technics and Time 1* and *2*, and then focusing on the aspect of Kantian Enlightenment thinking that defines knowledge as critique through reading and writing in *Technics and Time 3*, Stiegler has proceeded to work through the elements of his ontological imperative that stand in stark contrast to the Phenomenological Reduction and the epistemological problems it "solves." For Stiegler, epistemology is not related to the kind of "astonishment"-experience on which the Phenomenological Reduction relies (particularly in Husserl but in Heidegger as well); further, Stiegler's idea of "enchantment" is equally distant from that concept, however much they seem to overlap, since along with the primacy of technics comes the dilemma of interiority: for Stiegler the problematic of being is that to *experience* being is to have *learned* it, and that this can only be done through a process of *exteriorization.* [13] Thus, the experience of being is a function not only of memory but of "mnemotechnics," the "technical prostheses" through which memory is recorded and transmitted across generations, never limited to – by definition never capable of being limited to – individual minds; this is an entirely différant sense of memory without which, Stiegler claims, the human, "written" through technics, is simply not and never would have been possible. The common notion of "memory," as deposits of "individual experience" stored in the individual brain as images and impressions, and more specifically of memory expansion, is in Stiegler's view of it actually folded into a didactic, historical process that only *begins* (i.e. has already always

begun) in memory's exteriorization, not in the "taking in" or "recording" of experience in the mind. This exteriorization Stiegler calls "tertiary retention," not just the recording of inner process and sensory/experiential memory, but "long-term" memory stretching across generations. Manifestations of tertiary memory include such things as libraries (and archives of all kinds), oral lore, and the various technological means of recording memory, making it available "outside" of any individual. Such "transindividual" information, the realm of technics, occurs through what Stiegler calls "grammatization" (as opposed to grammatology), through which – by any technical means – memory is "out-sourced," recorded (retained "artificially" [14] in some form other than its prior one (e.g. music or vocal CD's, video recordings, books, etc.). Though this may seem at first to be (and indeed is) a reversal of received ideas of memory, it is a reversal that is generally misunderstood or strategically evaded, according to Stiegler; even cognitive science continues to interpret the cognitive mechanics as a metaphor, and artificial intelligence as "mimetic substitutions for human traits" (TT2 78), when in fact the opposite is far more accurate: it is human cognition that must be re-conceived as a function of technics, in "a total transformation" that is in itself *neutral*.

This transformative process has been interpreted in numerous ways and has produced a number of results, ranging from Stiegler's (Enlightenment) notion of "maturity" and responsibility on the one hand to André Leroi-Gourhan's ominous "a-human becoming" (echoed, equally ominously, in Stiegler) devolving from an ever-increasing "discrepancy between technological *speed* and physiological *slowness*," on the other. But no matter the outcome, as Hubert Guillaud shows, "the advanced rational technologies *constituting* numeric social systems transform the social networks that came before them" (emphasis added), [15] specifically as a result of Stiegler's sense of a catalytic technics and its independent temporal modes of operation which, though they may constitute the human, do not run parallel with it but rather *ahead* of it. These binaries were never and are now less than ever matters of (human) choice, let alone of volition: the newest forms of grammatization, ascription of knowledge to digital and numeric media, as Leroi-Gourhan adumbrated in 1965, leads to a chimerical sense of "objective" knowledge as the artifice of memory – or else to the establishment of perpetually shifting cultural archivization (and its archives) whose work it is not only to expand but to establish knowledge; in either case, Stiegler's conception of technics redefines the relationship between mind and world, and therefore not only of consciousness but of what might be called "experience in general" in the wider, *gestalt*, sense, and by extension the radical, endless expansion of both memory *and* consciousness *beyond* "the human."

Stiegler frames the struggle between these two potential outcomes of technics as sets of tactics within strategies of the construction of the human, historically and currently, as "the battle for intelligence." Since technics grounds and pervades the very nature of the human, we as humans can employ it (and/)or be employed by it; to re-enchant the world, then, is to *come to terms* with technics. Stiegler works through the anthropology of this grammatical notion before transforming his case into the non- or post-anthropological, pointing out that organological but inorganic "mental instruments" [16] (*Réenchanter le monde* 20), starting with worked stone and proceeding over millennia to the Enlightenment, the Industrial Revolution, the internet, and now beyond, are the technical/technological equivalent of Foucault's "writing of the self," all transformers of consciousness into instruments, "mental instruments," whose instrumentalization then translates into power (or its lack) or volition (or its lack), instruments always in a condition of grammatized cultural negotiation. As such, all of the instruments which not only shape but create the mind are *pharmaka*, serving as both poison and remedy for the mind's growth and efficacy. Stiegler here capitalizes on the role of the *pharmakon* in Derrida's "Plato's Pharmacy," concentrating on its inherent dynamic tension and undecidability. [17] Taking them further, however, again echoing Nietzsche's irresolvable Dionysian/Apollonian and Freud's id/ego struggle, Stiegler focuses on the meta-struggle not of contesting forces but of contest "itself." Another way to say this, within the context of Stiegler's technics (and of contemporary techniques and technologies), is that such a meta-struggle is *relational*, consisting of "R technologies" [18] that can focus and expand the mind

or operate as what Foucault calls "control technologies" within – to use a phrase both Stiegler and Deleuze borrow from William Burroughs – "societies of control," which work diligently to prevent such ("mental") instruments from having any other result than mind-control (*Réenchanter le monde* 28). Disenchantment and re-enchantment, then, though they present themselves dialectically as subsets of "enchantment" are in fact much more complex than "two sides of a coin": they are more like a Janus-faced continuum or the tightrope in the Preface to Nietzsche's *Zarathustra.* The *negation* of enchantment, then, transcends both disenchantment and re-enchantment: it consists of nothing less than the destruction of the human itself and is therefore *as a question* ontologically crucial.

II. Transformer [19]

> Knowledge is the mutability of knowledges. *Mutability* is another name for knowledge's essential accidentality: there is no immutable knowledge . . . and rational knowledge is irreducibly open: the *transmission* of knowledges is their *transformation*, across which ranges the persistence of intransmissible knowledge, tested by a reality that appropriates it even while instrumentalizing it *as well as* the conditions for its elaboration and production. Knowledge's contents are constructed by their reproducibility, and knowledge's reproducibility *is* its producibility. (TT2 136)

Stiegler's excursions and incursions into the fundamental nature of knowledge-acquisition, which are themselves *pharmaka*, can thereby have an oxymoronic quality: "rational knowledge is irreducibly open." It is precisely this oxymoronic quality, through its structural metaphoric tension, that produces the *volition* by which learning becomes not only dynamic but transformative in the most primary sense. Only through a process of radical transformation, according to Stiegler – and this is equally true of every person and of every society and culture – can the true nature of the human be imagined, though such an outcome remains by definition eternally chimerical, a struggle, not an arrival. Such transformation, always multiple and never finished, but moving in pragmatic terms from "immaturity" toward "maturity," is by extension itself an ontological imperative whose result is *learning to be human*.

Or not: in contemporary culture the challenge consists of choosing between adherence to one aspect or another of the ubiquitous technical environment. While the programming *industries*' (ranging from television to the internet to podcasts – to the emergent and not-yet-emergent technologies of control) strategy is the "short-circuiting" of the learning process in favor of the development and nurturance of automatic responses to stimuli at the level of drives; contrarily, programming *institutions*' (cultural relics, family histories and artifacts, the education and training systems, as opposed to programming *industries*) strategies deliver an awareness and immersion in long circuits of cultural memory (and rely on their development), thus connecting and cross-fertilizing the generations – and producing the ultimate cultural oxymoron: structured knowledge that is simultaneously "radically open." Properly understood, Stiegler's assertion that "the *transmission* of knowledges is their *transformation*" is itself transformative – of the very nature of knowledge. Inherent in Stiegler's sense of knowledge is a powerful response to any "detached" idealism (let alone ideology) and an adherence to a transformative *process* recalling Nietzsche's declaration that "there are no facts, only interpretations." What might be called cultural normatives, in this sense, are never fixed, neither in history nor in any contemporary nor imagined future implementation, but are rather based on a theory of "mutable knowledge" founded on but moving beyond the Derridean legacy of grammatization and the Deleuzean legacy of deterritorialization. [20]

The success of any effort to understand the radical nature of this claim relies on the process of maturation-as-transformation through which humans must go on the way to learning maturity's grounding trait: taking responsibility. In *Taking Care 1*, Stiegler explains this process through a

psychoanalytic model: taking responsibility relies on one's ability to distinguish between id forces (drives) [21] and ego forces (as desire: Stiegler shows that desire *requires* ego), remembering that both are the result of exteriorization/grammatization. Stiegler differentiates id [22] ("pre-human") forces that lead directly to "passive consumption" – of products ranging from goods and services to information and "opinion" itself (based on adaptation) – from ego forces. Drives not only do not require reflection but prevent it; desire, as an egoistic force, transforms drives into "attention, civility, civilization, as Freud himself says" (*Réenchanter le monde* 63). Since by definition desires focus on objects, the objects *of* desire, they enter and rise to the spatio-temporal sphere of "hypomnemata" (though, as *pharmaka*, never free of the possibility of being captured by psychotechnologies and regressed to drives, which operate entirely outside the spatio-temporal, human realm). On a wider scale, "culture," [23] consisting of long circuits of generational transmission, cannot exist, let alone perpetuate itself, through the strategic destruction of responsibility by the programming industries. Technologies of control (R technologies) destroy desire, transforming it "back" into drives, within the context of consumer capitalism which currently defines it. In this regard, among the most provocative of Stiegler's claims is the claim relating this drive/desire bifurcation to the nature of capital and capitalism as *products* of the pharmacological – and thus neutral – nature of grammatization. While claiming that "more than any other energy, it is the libido as the power of trans-formation, that makes capital function; . . . it is *desire* that constitutes capitalism's energy, its dynamism" (*Réenchanter le monde* 63), Stiegler concurrently shows that attention-capturing, control-oriented psychotechnologies *destroy* desire, as the "libidinal energy," of both individuals and societies. But "desire," as a term and a catalyst, remains for Stiegler within its contemporary (that is, Romantic [24]) interpretation, which he calls "the incalculable in an age of calculation" (*Réenchanter le monde* 97), [25] and is itself a *pharmakon*, since it is "prior" to intelligence and therefore to responsibility. [26]

Development of long-(inter-generational)-circuits leading to maturity and an understanding (and taking) of responsibility is predicated on the learned ability to *pay attention*. For Stiegler, attention is at the very heart of a re-interpreted (perhaps post-) phenomenology, and the only hope for victory in the "battle for intelligence." If it is true, as Stiegler claims, that "the transmission of knowledge is its transformation," then *only* transmissible knowledge can contribute to the creation and perpetuation of both individual and collective "humanity." Transmissible knowledge avoids the cul-de-sac of being short-circuited by drive-oriented psychotechnologies of mind-capture. But while it is true that since (individual and collective) culture *is* transformation, and vice-versa, and since culture is produced through technics, it inevitably contains significant pharmacological obstacles, what Stiegler calls "resistances," a central one of which is the conundrum of "deep" and "hyper" attention. In this regard, in *Taking Care 1* Stiegler explores Katherine Hayles' work on Attention-Deficit and Hyper-Attention Disorders to show how the very nature of "multi-tasking" and "surfing" eviscerate the "deep" attention required for long-term intelligence. Stiegler applies the groundwork laid out in *Technics and Time* to the current crisis in technology and culture, exploring the dense relationship between technics as an "originary prostheticity" and time as a phenomenological normative underlying the current concern with "tele-presence, tele-life, and tele-death" (TT2 181), which in turn influence, if they do not produce, *both* the inevitability of "the body's ungrounding [*déterrainisation*]" (TT2 99) *and* the extension of the "mechanisms of retention" from Husserlian secondary retention to Stiegler's tertiary retention. In other words, this grammatization [27] of attention has resulted in both the current crisis of attention and its "remedy," the long-circuit attention of intergenerational education on multiple fronts:

> if temporalization – what Heidegger thought of as schematism and what we have here conceived of as originary prostheticity – may be thought of as retentional finitude, . . . [it] produces the technical characteristics of new, *différant* identities, . . . whose primary effect is a *profound transformation* of the conditions of *reification* or *event-ization* [*événmentialisation*] (TT2 100)

which can transform hyper-attention "back" into deep attention, as the road to maturity.

Implicit in the need to learn to be responsible and to pay attention, over the long-term, is the development of a (double) sense of individuality. "Individuation" [28] for Stiegler, as for Simondon, is a psychic / collective / technical process the *result* – not the *cause* – of which is the (hypothetical) individual; this vital cause / effect reversal, the opposite of humanistic doctrine, forms the basis of technics' primacy in the process of the emergence of the human, as the perpetually incomplete process of individuation, a process that requires the ability to "speak for oneself," i.e. to receive "utterances" *and* to respond to them – to take responsibility for responding, thus both participating in and perpetuating the dialogism through which intelligence develops and which insists on the perpetual transformation of language: as individuality evolves through dialogue, so does dialogue (i.e. language) itself. The process of individuation is thus inherently one of transformation: "the transformation of lifestyles is the law of the form of human life – of existence. . . . We ex-sist, and that means that we are transformed" (*Réenchanter le monde* 40); the "originary prosthesis" accompanies the transformation of maturing humanity through its own perpetual transformation. [29] Stiegler creates a constellation of influences in his idea of individuation. In addition to Simondon, Stiegler turns to Nietzsche and Freud, capturing Nietzsche's sense in *The Birth of Tragedy* of the Apollonian *principium individuationis*, as form and harmony, [30] the latter by considering the ego (in French, *moi*) grammatologically but also (*à la* Nietzsche) by linking ego and id as "nested" foci: Stiegler shows that the id / unconscious can *only* be repressed from within the ego. As the focus of critique, the ego then forms circuitry with the *surmoi* in order to bring critical faculties to tertiary retentions. In *Taking Care 1*, Stiegler explores Kant's "What is the Enlightenment" to work through Kant's complex notion of individuation *as a critical faculty*: as the ability to use the tools that technics provides to critique information coming from "the world" – and (as Kant insists) to tenaciously critique both the results of that critique and its very process – to critique critique. Tripartite individuation, psychic ("I"), collective ("we"), and technical, is thus associative and elliptical, grounding itself in and simultaneously orbiting the very process of critique through which individuation (and trans-individuation or transduction) can take place. [31]

Insofar as psychic *and* collective individuation, through technics, are psychologically and socially dynamic and therefore in perpetual transformation, they can be slow and "insensitive," as was the case for millennia, or "rapid and obvious," as has been the case since the Industrial Revolution (i.e. since the rise of industrial capitalism and the launching of what Stiegler calls "light-time" – rather than light-speed). Through the course of the last century and a half, human existence has (or should have, had it been paying *attention*) witnessed its increasing dissociation, not only with regard to technology but also, chimerically, with regard to super- and then hyper-technology. Technology's hyper-industrialization, beginning with the Industrial Revolution, then moving through techno-paranoia [32] to techno-amnesia, is a step yet further afield in that it privileges a model of individuation in which unlike the Simondon / Stiegler sense of it, a pseudo-egoistic "I" (I as in isolation) chimerically precedes any but the rhetorical "we," resulting in ever-increasing separation and thus susceptibility to control by psychotechnologies, as Foucault has shown (and as is inherent in Sartrean Existentialism); this reversal is now, according to Stiegler, rapidly leading to the implosion of the individual into psychotechnological fragmentation and the onset of the post-humanistic, if not of the post-human itself. The most pressing 21st century task, then – counter-intuitively – is not global warming but the radical re-thinking of the relationship between individuality and the human, within the shifts taking place in Stiegler's "light-time." [33] Individuality, psychic and collective, is however a stage on the way to the *collective* individuation called, after Simondon, *transindividuation*. Given the centrality of dynamic transformation, any sense of "collectivity" must be both active and *prior* in order to engage in the battle for intelligence. This means that only in participating in the critical action of transindividuation can any sense of collectivity, and thus any sense of culture itself, be produced: collective individuation is transindividuation or else it is nothing more than a collective solipsism and not individuation in Stiegler's sense.

It is at this point that the phenomenological aspect of individuation, as experience of and in the

world, shifts (through that "trans-") to the ontological. The mechanism or technical component of transindividuation must by definition extend beyond any isolated locus. It must (indeed, it must always already) be grammatized. Since technics is the ground for *all* cultural (i.e. différant) identification, its mechanism is *always* grammatization and, *eo ipso*, writing *as* writing, in the largest sense. As Stiegler puts it in *Technics and Time 2*:

> Writing is an exact *formalization* of memory, and it is as such that it brings about transformations *of the already-there*, and through them the conditions of anticipation and connection between societies and their futures, of language (*written* language is no longer the same language), of knowledge (*written* knowledge becomes apodictically cumulative), of power (a *written* society becomes political in the strongest sense of "isonomia" and public law). Writing, whose science is grammar, thus also gives rise to *rules* of memory, which had been based on conditions of functioning and which nonetheless, by the singular fact of finding itself explicit and "exteriorized," is constructed relative to the entirely different parameters of a renewed synchrony and a new diachrony of language. Writing has an essential *performativity*, *as formalization of grammar rules*. (110)

The relation between "the formalization of grammar rules" and the trans-formation endemic to transindividuation receives its force from the establishment of circuits forming networks of co-individuation that can only emerge through education in both the narrowest and the broadest sense, as programming *institutions*. The orchestrated circuitry of transindividuation is at the very least one of the penultimate, if not one of the ultimate, *pharmaka* in the transformative process of re-enchantment. Transindividuation, because of its grammatological nature, consists of myriad significations (including the metastabilized idea, and the process, of signification) transported through time by humans as agents, catalyzers, and products of technics. On the other hand, the programming *industries* destroy this circuitry through which the cross-associations of technical and technological advancement (or, at least, change) have previously taken place as social integers; as Stiegler says, "transindividuation is short-circuited by service industries": "to undergo the effects of a service industry is in fact to have one's existence trans-formed without participating in the trans-formation" (*Réenchanter le monde* 41). Existence without participation, as opposed to ex-sistence through participation and critique, is the very definition of the malaise Stiegler points out to be the result of disorientation and disenchantment. This malaise, the "problem" of which forms the subtitle of *Technics and Time 3*, is (but is more than) the problem of consumption, in that it is marked by consumption generated by *drives* and not by *desire*, by stupidity rather than intelligence, and by thought-less passivity rather than critique. Malaise such as this leads quickly to the (passive) rejection of transindividuation Stiegler claims is ubiquitous around us now, throwing the very nature of human experience into crisis.

Existence through participation (i.e. "real democracy") as engagement in the *dynamic process* of transindividuation manifests itself in adoption. Projecting itself in and through time, adoption is both the *effect* and the *affect* of transindividuation; adoption manifests active participation in the transindividuation by which cultures and societies are transformed, and which create the conditions for further transindividuations. Transindividuation, then, is a process of *adoption* which adheres to the version of "the future" that Derrida refers to as *a venir*, not *futur*, [34] manifesting deep attention to strengthen extant individuation or, even better, to work to (perpetually) construct new processes of individuation. To *adopt* a new psychic collectivity is potentially to accept what both Derrida and Stiegler would call a différant identity, through one's own transformative process; adoption is both an intensification of singularity and simultaneously what Stiegler refers to as one's "neguentropic potential." [35] A significant element of this potential and therefore of existence through participation (announced by "ex-"), is that echo of ex-teriorization lurking in "trans"-formation: différance as and in technics. If transformation is associative – indeed, is *association as such* – it marks a departure from the blockage or dis-sociation of contemporary service culture. In the face of the potential destruction – or at the very least, diversion – of attention, which would mean *losing* the battle for intelligence, Stiegler clearly shows

that the pharmacology of transformation can perhaps *more* easily result in a worse, or even a *worst* outcome, rather than to a *better* or *best*, all of which would nonetheless in any case be ephemeral. Working through the stages of transformation from disenchantment to re-enchantment, from dissociation to association, individuals, societies, and cultures perpetually re-define not only lifestyles and modes of existence but the very conditions through which such re-definitions occur. These redefinitions operate through what Husserl calls "regional ontologies," [36] which Stiegler re-maps as spaces for the transformation of "psychotechnics into nootechnics" (*Taking Care* 121), the creation of manifestations of anamnesia through "hypomnesia." [37] Only through adoption can the *conditions* of regional ontologies be locally organized and re-defined through the same process that can "transform the deterritorialized flux" (*Taking Care* 68).

Conditions such as these take transformation to its highest *critical* level: that of "evaluative" critique. Given the fundamental hypothesis that transformation can be seen as *either* a neutral or an infinitely multiple process, it is clear that transformation entails either no, or else all possible, inherent evaluative criteria. That is to say that the psychic and collective individual must be vigilant in maintaining a *meta*-transformative perspective on the process of transformation. According to Stiegler, this does not mean "knowing how" one, individually or collectively, is transformed (that would preclude transformation itself, as Stiegler understands it), but how transformative *conditions* of individuation create potential outcomes:

> It is because trans-formation can lead to the worst that it is necessary to maintain and preserve the conditions of a meta-trans-formation, defining or extending the limits of all possible transformations in such a way that they constitute a *better*. The conditions of all possible trans-formations, in forming a mechanism for local meta-trans-formation, are themselves transformations of the process of individuation as a process of adoption. (*Réenchanter le monde* 69)

Meta-transformation means that just as the ego/*moi* contains and conceals the id/*ça*, so new modes of individuation resist "worse" or "worst" transformations that they too conceal (i.e. which are not lost as possibilities, since transformation must always remain radically open); this aspect of critical thinking acts as a kind of superego (*surmoi*), perpetually analyzing and judging the results of previous transformative regional ontologies against current ones. What must be guarded against, through the programming *institutions*, as a result of the ascendency of the programming and cognitive *industries*, is any sign of the "mass mystification" [38] resultant from the occlusion of desire by drives, of deep attention by hyper-attention, and of *oiko-nomia* [39] by consumer capitalism. Meta-transformation is a cumulative process of innovation, a socio-genesis that is clearly a *techno*-genesis in Stiegler's sense. The moment "knowledge" transmutes into the condition of a set of rules (or rules as mystifications) that cannot subsequently generate new rules, it is no longer knowledge, but either dogma or marketing (between which there is no différance). This evaluation forms the very core of meta-transformation.

Insofar as psychic and collective individuation must be defined – always fluidly – as projected desire, it is always a matter of either dis- or re-enchantment. Enchantment, in the sense in which Stiegler appropriates it from the MEDEF, is the undoing of "cognitive capitalism's" seizure and control of techniques (skills), knowledge, and consumption, a seizure which, as the word suggests, is a suspension of dynamic development. The forces of transindividuation bring about the adoption not only of cultural histories and techniques but of the dynamic, participatory involvement that can re-direct "telecracy" "back" into democracy – which in Stiegler's participatory sense of it cannot survive the amnesia resultant from the subversion of long circuits of attention and critical thinking by programming industries whose strategic goal is attention-capture and the undermining, if not the destruction, of inter-generational transference. The forces of control operating in the "worst" transformative dimension in which we now find ourselves strive to become "adaptive," rather than *adoptive,* Stiegler points out; that is, entropic (*Réenchanter le monde* 122). Adaptation – to adapt to environmental circumstance – as opposed to adoption – to participate in the genealogical transmission and transformation of knowledge and culture – is for

Stiegler not a matter of adjustment but of amnesia, of the mind in thrall to the spectacle of images and messages designed to short-circuit attention and critique. Adaptation means "the imperatives of production that are secondary to shareholder expectations, and not producers of alternatives, of models of meta-transformation. Knowledge is *intrinsically contradictory to adaptation, as innovation*" (*Réenchanter le monde* 122). In other words, adaptation offers no alternative options to control, and emerges as the blocking of – the obstacle to – human development. Stiegler, [40] sees the exteriorization of memory – technics – as the very ground of human being as such (original prostheticity); *all knowledge,* Stiegler says, has its origins in exteriorization: memory is "exteriorization re-interiorized in new intellectual and motor behaviors" (*Réenchanter le monde* 136). The transformative process of individuation *is* the process of exteriorization *is* grammatization.

Re-enchantment, then, "the re-enchantment of the world," is beyond all else a gamble – indeed, according to Stiegler, a gamble against all the current odds. As the word "enchantment" implies, *re*-enchantment in a world currently "enchanted" (in thrall to) psychotechnologies would be nothing less than magical, resultant from supernatural forces. But despite seemingly overwhelming evidence, Stiegler is not pessimistic about this potential renewal; in his most recent work he sees the possibility of such a re-enchantment's occurring as resting on the associative circuitry of "information, knowledge, technology, industry, and society as the fragile product of an international politics of *the transformation of contemporary capitalism*" (*Réenchanter le monde* 165; emphasis added). In the battle *against* disenchantment – whose other names are ennui and care-less-ness [*incurie*] – in the battle *for* intelligence and *for* the perpetual (re)creation of enchantment, the transformation of psychotechnologies into "psychopolitics devoted to the service of a noopolitics . . . through technologies of the mind" (*Taking Care* 339) is Stiegler's great hope. There is no reason to think that this re-creation is not possible; indeed, Stiegler insists, we *must* assume that it is possible (to give Stiegler the last word):

> We can certainly go on struggling against care-less-ness and weigh the results. But we must face the consequences of recent information on the state of the human mind, on what is destroyed and on the possibilities of reconstructing what has been destroyed – on condition of fundamentally reversing the situation of this power as a psychopower, and of subjecting it to the controls prescribed by a psychopolitics placed in the service of a noopolitics, across an industrial politics of the mind. (*Taking Care* 339)

Only through transindividuation – psychic, collective, and technical – can any hope of a future transcending our current thrall to programming, an ontological future in the most fundamental sense, become a program for a future of the human in a world of psychotechnological mystifications.

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Endnotes

1. Stiegler, Bernard. *Technics and Time 1: The Fault of Epimetheus*. Trans. Richard Beardsworth and Georges Collins. Stanford, California: Stanford University Press, 1998: 21. Henceforth TT1.

2. Orchestrating the work of André Leroi-Gourhan and other anthropologists with Gilbert Simondon's sociology, Stiegler asserts that the human is the product, not the "cause," of

technical evolution, an evolution whose grounding concept is "technics." In this sense, "the technical," "techniques," and "technology" all manifest aspects and modes of operation of technics. For Stiegler, the world is not "to hand," as it is in Heidegger; rather, "the hand learns from the tool"; "technical" or "technological" innovation is thus a matter of trying to catch up with technics and technologies. This becomes more challenging when we consider that speaking and writing are technical structures – as is language (and the nature of language) itself. "The human" is a result, a subset, of technics: humans are, as Stiegler carefully lays out in *Technics and Time 1: The Fault of Epimetheus*, animals "without qualities." This idea of technics is diametrically opposed to Plato's anti-technical worldview and to Heidegger's phenomenological one, acting as both a deconstruction and a critique of both.

3. Jean-Hughes Barthélémy discusses this at length in the *Révue Appareil*. He shows clearly the relationship between the ground-breaking work of Simondon and Stiegler's radical break from both Simondon and Derrida.

4. It no longer seems necessary to italicize this word, which designates the homophonic slippage between difference (spatial) and deferral (temporal) Jacques Derrida pointed out as being "at work" in all texts and in all experience. Stiegler's metalepsis causes experience to result from text (as technics).

5. "Transindividuation" or "transduction," terms and concepts explored by Simondon, entails the psychic and collective individuation by which humans reach "maturity." Psychic individuation, the physiological process of maturation, must be accompanied by "collective" individuation (the learning of a long-term cultural archive, what Stiegler calls "tertiary retentions") in order for true maturity to take place; without such maturity, culture becomes gadgetry and "drives": immaturity.

6. Robert Maggiori addresses this complex "pharmacological" thought in a review of *Taking Care of Youth and the Generations*.

7. Stiegler's work from the early 1990's, following his close work with Derrida at the EHSS in Paris (which resulted in *Echographies of Television* and Stiegler's conception of the relationship between *différance* and deterritorialization, the first real cross-pollenization of Derrida and Deleuze) appeared first in the mid-90's from Galilée, chiefly (but by no means solely) in his five-volume masterwork, *Technics and Time,* the first two volumes of which have now appeared in English from Stanford University Press: v. 1, *The Fault of Epimetheus*, translated by Richard Beardsworth and Georges Collins, 1998; v. 2, *Disorientation*, translated by Stephen Barker, 2008 (henceforth TT2). Stiegler's early work is a radical re-writing of the entire phenomenological tradition, read through anthropology (Leroi-Gourhan) and sociology (Simondon) at precisely their intersection with philosophy-proper; this relation to Stiegler's most recent work, for example on democracy and education, is the catalyst for this piece.

8. http://www.arsindustrialis.org/?q=node/3/p/view&mini=calendar/2008-12-05.

9. *Technics and Time 3, The Time of Cinema and the Problem of Malaise*, somewhat provocatively focusing on cinema and Kant, will appear from Stanford UP in 2010.

10. Stiegler, Bernard. *Réenchanter le monde: La valeur esprit contre le populisme industriel*. Paris: Flammarion, 2006: 5.

11. The distinction Stiegler makes here is between "programming *industries*," interested in capturing attention (i.e. consciousness) and manipulating it for marketing purposes, and "programming *institutions*" ranging (in ever-expanding circles) from the family to the education system to culture in general – to language itself, as grammatization. Programming *institutions* are responsible for teaching maturity and responsibility;

programming *industries* are responsible for creating "gregarious audiences" and exploiting "psychotechnologies" designed to create reflexivity and passivity as a binary. According to Stiegler, when schools "teach" blind obedience and passive acceptance of "orders" rather than critical thinking (in the Enlightenment sense), they transform themselves from programming institutions into programming industries.

12. Stiegler directly explores this matter in *La Télécratie contre la démocratie: Lettre ouverte aux représentants politiques*. Paris: Flammarion. 2006.

13. The significant link here is between exteriorization and "epiphylogenesis," explored at length in both TT1 and TT2; "phylogenesis" remains traditionally evolutionary, while the very nature of "epi" requires and is defined by exteriorization and the "total transformation" of a network of three elements:
    1. "the organic human being"
    2. "all the accumulated knowledge, in its many genres, that is vital to humanity"
    3. "all the instruments developed by humans" (TT2 78)

14. "Artificially" is in inverted commas because according to Stiegler since the human is itself a function – a result – of technics, culture or "the generations" can only be registered through grammatization: the human is itself artificial (as Stiegler says elsewhere, "prosthetic").

15. Guillaud takes a very interesting perspective on the evolution and transformation of friendship (*amitié*) within the context of the contemporary world of "socio-technologies," following up on the "pharmacological" nature of the grammatization process, showing both the similarities and the divergences of Derrida and Stiegler. Henceforth HG.

16. Mallarme's name for the book.

17. Dynamic tensions are themselves undecidable in the sense that they are thus always in flux. This is certainly true for Stiegler in terms of both the way in which technics operates relative to the human mind and the way in which *pharmaka* manifest *both* poison and cure, not either/or: undecidability begins in this binary but then, according to Derrida (dissemination) and Stiegler (grammatization) extends infinitely spatially and temporally.

18. "R technologies," which Stiegler explores extensively in *Réenchanter le monde*, are "relational technologies" first defined in Jeremy Rifkin's *The Age of Access* (Tarcher, 2001), which Stiegler introduces as "service capitalism," "all technical devices and networks of telecommunication and radio-telediffusion" which "are the supports of biometrics, and then of nanotechnologies in their entirety" (REM, 38-39).

19. Part of the delightful legacy of grammatization is that this word can be read correctly as both the infinitive of a French verb and as a shape-changing – trans-forming – toy robot.

20. This is the sense in which Stiegler is "post-deconstructive," and perhaps "post-theory." "Grammatization" is quite simple to understand (a "discourse" of any kind, from text to music to painting, transformed into another, "non-original," medium) but essential to an understanding of the contemporary "archive," and well beyond both "grammatology" as Derrida means it and "the plane of immanence" as Deleuze means it.

21. It is useful to remember that *Nietzsche* first uses the notion of *die treiben*, drives, in this sense, claiming in a number of places that "the subject" is a false and *unnecessary* concept, that indeed what we call the subject is in fact a bundle of drives: "it is our needs that interpret the world; our drives and their For and Against" (*The Will to Power* §481). Note also that Ernest Jones reports Freud's telling him that he (Freud) had to stop reading Nietzsche in order "to have his own thoughts."

22. In French, "id" is "*ça*," whose most familiar denotation is "that"; in *Taking Care*, Stiegler spends extensive time connecting "that" to the programming industries' need to preempt intelligence in order to market its products, such as the "evening news"; "ego" in French is "*moi*," "me": though this designation loses the syntax of the Latin "I am" as a *clause* (and therefore a complete grammatization), as the objective pronoun "describing" the self *moi* reaches the same indirect, exteriorized conclusion.

Since Stiegler is working across linguistic thresholds, it is important to remember that in German, "id" is "*es*" ("it") rather than "that," and "ego" is "*ich*" ("I") rather than "me." In terms of their grammatological valences, these are not insignificant differences, particularly given that their designations in English "remain" in Latin.

23. In terms of the tool-orientation of Stiegler's technics, out of Leroi-Gourhan, it is useful to remember that "culture," in English and French, "*kultur*" in German, comes from the Latin "*cultura*," which means "to till the soil." The connection involves human manipulation of nature, first hunting and gathering, then agri-culture (from which culture literally gets its name), but always "manipulation," treatment by the hand. This is metaphoric but more than a metaphor, as Stiegler and his theoretical forebears clearly show: human ancestors' literal hands played a significant part (if technics is more than an hypothesis) in the creation of the human; more recently, traversing the long circuits of human evolution, the hand has become *both* literal and metaphorical as the agent of ever-expanding volitional forces.

24. Stiegler relies heavily on Kant's Enlightenment concept of reason and its place in the structure of a system of "comprehensive education"; this reliance – at first glance – puts Stiegler at odds with the so-called Romantic notion of desire as *etwas mehr*, "always more!," a concept of desire (like virtually all others of Romanticism) still current today. However, because desire as Stiegler defines it always has an object, a stopping-point (however chimerical), it is a liaison between a *perpetual* desire (i.e. a drive) and the *achievement* of desire in the attainment of the object of desire, neither of which, within the context of Stiegler's sense of the human, can stabilize.

Stiegler's sense of desire resonates with his sense of ego: the ego *contains* the id, since the human being can only be "conscious" of id forces from the perspective of the ego; therefore, id must be part of ego. The extended implications of this are vital to an understanding of the relationship between the programming *industries* and the programming *institutions*.

25. The idea here is that with the Protestant Reformation the "spiritual" became the "calculable," moving from ephemeral to numerical, and that contemporary culture is in thrall to the pseudo-metaphysical idea that all values are calculable. Since desire is by definition not calculable, it is all too easy for desire to be displaced by the appearance of calculable outcomes ("if you call now it's yours for only $19.99!") supplanting desire.

26. Deleuze's treatment of the molar and the molecular in *A Thousand Plateaus* manifests a related but divergent echoing of psychoanalysis. Deleuze is also committed to "the multiple," post-Oedipal sense of the "assemblage."

27. Stiegler here refers to grammatization as *littéralisation* which, since it is based on becoming-literate – learning to read *and* write – and thus to *critique*, I have translated in *Taking Care 1* as "literarization."

In his view of individuation, Stiegler draws heavily on Gilbert Simondon's *L'individuation psychique et collective*, written in 1958 and one of only two (now very influential) books (the

other being *Du mode d'existence des objets techniques*) addressing technics and individuation. Neither of these major works has been translated into English. For Simondon, the investigation into and treatment of individuation is anthropologico-sociological; Stiegler adopts Simondon to linguistics and philosophy without losing Simondon's historical and cultural grounding.

28. The endless ontological process of individuation, as laid out by Simondon, defines emergent individuation as resting on "pre-individual fields" (an idea that heavily influenced Deleuze, as he acknowledges) whose residue remains after individuation occurs, thus allowing for the perpetuation of further individuations; for Simondon, the *process* of individuation never ends with *an* individual (is always incomplete, always a *to come*), it is inherently *collective* – leading to Stiegler's echo of Simondon in treating "psychic and collective individuation."

29. See also Deleuze's comments on "blocks to becoming" (237ff.) and "modes of individuation" (261ff.) in *A Thousand Plateaus* for an alternative dialogue on this theme.

30. In contest with (though not, strictly speaking, opposed to) the dynamic fluidity and chaotic irrationality of the Dionysian, where the individual is lost. For Nietzsche, these two "forces" are caught in an irresolvable, dynamic tension; thus, Greek tragedy. Only when one force "wins," as Nietzsche says happens with Euripides (rationality "defeats" chaos), does tragedy turn into didactics.

31. Thus Stiegler reveals the inherent, oxymoronic pharmacology of "individuation," as both "that which separates itself from others" and as "that which is inherently unified, undivided." Stiegler will show that both of these senses of "individuation," in terms of Kant's notion of critique, must be re-thought on the basis of technics. The first, can lead either to responsibility *or* to alienation and anomie; the second, to stability-as-ossification *or* comprehension and thus *consciousness*, a vital mark of responsibility and critique.

32. The techno-paranoia of the post World War II era, the "nuclear age" but also, starting in the 1950's, the age of information technologies (informatics), is Simondon's catalyst: both of his books respond to the new conditions of techno-fear that do not merely see *machines* "taking over" (à la, for example, Chaplin's earlier, neo-Marxian *Modern Times*, etc.) but *machinics as the fundamental condition of techno-humanity*: not "man against machine" but "machine-man." The Dadaist fascination with a parodic robotics thus takes a serious turn (in terms of popular entertainment, the path from *The War of the Worlds*, *The Day the Earth Stood Still*, etc. to *Blade Runner* is a simple and homogeneous one) into the techno-amnesia of the current era.

33. If the *latter* were to take place, the *former* would be a foregone conclusion: "saving the planet" would instantly emerge as the most simplistically obvious need imaginable – but this could and would only occur *relative* to a proper re-consideration of psychic, collective, and technical individuation.

34. *A venir* connotes a future that is not and cannot be foreseen; it is from this sense of futurity that Derrida develops the notion of "messianism without a messiah" as well as the temporal aspects of *khōra*; *futur* is predictive and specific, devoid of contingency – and therefore not "future" at all.

35. "Neguentropics" struggles against entropy, equalization, static balance, undifferentiation, and thus indifference. For Stiegler, transformation, individuation, transindividuation, adoption, and meta-transformation are neguentropic processes. See *Réenchanter le monde*, 44.

36. Stiegler discusses this important idea in Section 20 of *Taking Care*, "The organology of the education system."

37. See *La Télécratie contre la démocratie*, 158ff.

38. "Mystification" as Stiegler uses it is quite close to John Berger's similar sense of it in *Ways of Seeing*: "The past is never there waiting to be discovered, to be recognized for exactly what it is. History always constitutes the relation between a present and its past. Consequently fear of the present leads to mystification of the past. The past is not for living in; it is a well of conclusions from which we draw in order to act. Cultural mystification of the past entails a double loss". (11)

39. *Oiko-nomos*, literally in Greek "the law of the household," stands for the most fundamental nature of exchange at any level – for all "economies of exchange." Stiegler looks to re-place commodity capitalist exchange with something more fundamental, the "household-law" of responsibility of parent (to child) to convey vital cultural information, a generational "inheritance" that is in truly genealogical.

40. In this regard, Stiegler differs from Michel Serres, who opposes "societies of memory" to "societies of knowledge," seeing the latter as the exteriorization of memory entirely into machines, while the former remains "human"; Stiegler associates the two through technics.

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