

Critical Essays on Bernard Stiegler

Critical Essays on Bernard Stiegler:

*Philosophy, Technology,
Education*

By

Joff P. N. Bradley

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INTRODUCTION

In this collection of essays, I continue my examination of Bernard Stiegler's ideas, to demonstrate the relevance of the important philosopher's work in our contemporary moment where desire as such appears to be in crisis. The collection builds upon the groundwork laid in recent explorations of contemporary French philosophy and its profound implications for the philosophy of education (Cole and Bradley 2018). It also builds on Bradley (2023) and Bradley and Kennedy's collaboration (2021), which explored the growing interest in Stiegler's philosophy. With this interest in mind, I endeavor to contextualize Stiegler's philosophical work with respect to issues pertaining to the crisis of education and the wider social and ecological crises afflicting the contemporary moment.

Stiegler was a remarkable thinker. His work left an indelible mark on my intellectual journey and remains a huge source of inspiration, especially as I've spent over three decades researching the philosophy of Deleuze and Guattari and now find a way to clarify Deleuze's machine concept and the distinctions between *techné*, *technics*, *technicity*, and *technology*. In recent years, I have explored the application of Stiegler's work to the discipline of the philosophy of education and have had the privilege of calling on scholars from across the globe to engage with Stiegler's philosophy in the context of the philosophy of education. I am also currently embarking on a new project focused on Stiegler's educational philosophy, critical philosophy, technology, and education.

I was prompted to do this upon finding someone, who like me, saw education deeply in crisis. I came across Stiegler's work in the 1990s when I first began studying Deleuze and Guattari. But for me then as a man in his 20s, his work didn't resonate with the way I saw the world. It does now. It was only in the last 15 years since I began to study Stiegler seriously. My interest was piqued when Stiegler discusses the crisis of youth (2010), and I picked up on this because Guattari says much the same. They are thinkers who, like me, are deeply troubled by the way of the world. I say this as I

saw this crisis of youth materially and concretely expressed in the psychological problems of the students I was teaching in Tokyo. Recently I have been writing and lecturing about the problem of the hikikomori syndrome in Japan and Korea (Bradley 2022a, 2022b) and now in other countries across the planet. This is something people rarely talk about in Japan. It is something seldom discussed in the university, but it is there. I see it, I feel it, I feel responsible and compelled to respond.

In the context of education and the unprecedented digital revolution taking place, Stiegler provides us with a new language and concepts, for example, entropy and negentropy, hyper-consumption, attention-formation, pharmacology, and the cultivation of care. Yet, his philosophy cannot be considered one of resistance, he would hate that, but rather it proffers tools – conceptual and technical – for the revitalization of the university. It also speaks of the possibility of reinventing sustainable life on our planet.

As can be found in the pages of this book, I have often juxtaposed Stiegler's philosophy alongside other thinkers or philosophical positions to develop, contextualize, and cross-fertilize his thought with respect to both the philosophy of technology and the philosophy of education. My intent is to take up Stiegler's philosophy and apply it to different contexts to develop new forms or negentropic modes of knowledge vis-à-vis the use of technology in schools and universities. This is undertaken with a concern for education, for care, for fostering desire and spirit, and for revitalizing our ailing institutions. As technological advances radically remodel the global society, I am interested in how such a revolution will transform (for better or worse) the local milieu where we learn and live. I am concerned with the question of how AI-assisted and interactive technologies can be utilized to support lifelong learning in those contexts and how AI can be utilized to discourage the very real and profound disruption in our societies.

It is my belief that computer science alone is unable to answer these questions. Indeed, computer science lacks a standpoint to criticize the ongoing disruption and crisis in our societies. Data is all, we are told by computer enthusiasts. Teachers are told to exploit data-processing techniques (data mining, deep learning, machine learning,...). We are told to get with the times and the ways of wearables, with virtual and augmented reality. We are told to use AI technologies such as automated essay scoring, intelligent tutoring, assistive technologies, and speech recognition software. We are told to mine the possibilities of adaptive learning systems, natural

language processing translation, learning analytics, ChatGPT, adaptive games and simulations, smart bots... We are told to rethink the complex cognitive milieu we inhabit. We are told to get with the new ways of AI learning: computational thinking and model-building; open learner models; problem-solving processes; metacognition, affective aspects of learning; psychomotor learning.... Teachers are told to know about AI-assisted tutoring and scaffolding; motivational diagnosis and feedback; learner engagement; interactive pedagogical agents and learning companions; learning analytics and teaching support; learning with simulations. We are told to get with game-based learning; collaborative and group learning; social networks; inquiry learning; the social dimensions of learning; ubiquitous learning environments; learning through construction and making; lifelong learning. The list goes on and on without rhyme or reason.

Amidst this unthinking euphoria, it is Stiegler's philosophy that offers a critique of the form of capitalism we have. It offers a robust critique of our digital futures and a way to rethink the possibility of living well and sustainably with AI technology. For without critique and resistance, our education turns toxic and we are all the more stupid in our passivity. From Stiegler's perspective I think we can begin to mount a critique of the relation of ethics and AI in education. It is from his standpoint that we can begin to think fundamentally about what a truly sustainable society might mean. This sense of a sustainable society is something at odds with the limits of the UN Sustainable Development Goals. Inclusive, equitable quality education and lifelong learning opportunities for all are right and proper but can these be realized under the mode of planetary capitalism we have today?

The chapters assembled here examine diverse issues in the hope of navigating the digital revolution and redirecting philosophy (Bradley 2022c). They also engage with Stiegler's notions of pharmacology, general organology, and negentropic bifurcation, offering a fresh perspective on Deleuze's philosophy. By juxtaposing Stiegler with thinkers such as George Orwell, my research attempts to rethink the age of AI, and probe the intricate relationship between creativity, invention, and resistance. Chapters also juxtapose Stiegler alongside Hegel and address the formation and deformation of knowledge and *Bildung*, situating this in terms of the crises faced by youth in the digital age. The significance of these questions lies in their impact on processes of individuation and psychological passage in today's digital society. Stiegler's work is positioned within the context of the

corona pandemic, and draws on the work of Teilhard de Chardin, Arundhati Roy and Stiegler. Here I think the question of the entropocene and the potential for a planetary commons. This I consider in light of the idea of the noosphere that Stiegler explores through Vernadsky, de Chardin, and Alfred Lodka. My interest lies in the question of negentropic potential in the era of Big Data, platform capitalism, and algorithmic decision-making. The concept of the noetic necromass is similarly invoked through a consideration of H. G. Wells's exploration of the world brain and the loss of the utopian imagination surrounding it. The inquiry extends to science fiction, drawing contrasts between *Westworld* and *Blade Runner*, and provides a lens to examine the redirection of libido in drive-based capitalism amidst the ongoing AI and robotic revolution in hyper-capitalist societies.

In the realm of education, I scrutinize the ADHD problem and the uncritical enthusiasm for technology in education. I turn also to literacy issues and the concept of character amnesia in China and Japan, proposing the idea of a gymnastics of memory inspired by Stiegler's work. Reflecting on therapeutic care and curation at the institutional level, I rethink Winnicott's idea of transitional object and the erosion of knowledge in the smart city. And I conclude by juxtaposing British writer Will Self with Stiegler, to ruminate on the impossibility of epoché and the psychological effects of technology on the human sensorium. While my interest is expansive it is hoped I do not slip into jargon or merely echo the master's argot. My intent is to forge an accessible pedagogical method, drawing from Stiegler's lexicon while incorporating idioms from other traditions, such as educational philosophy. My goal is to work in collaboration, proposing elevated metamodels of change and transformation that transcend one philosophical territory. In applying Stiegler's work to the philosophy of education, my aim is to experiment with his ideas, to put them to use, to help those who like me are immersed daily in the struggle to capture the hearts and minds of young people.

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POLITICS AND PHILOSOPHY

CHAPTER 1

ON THE USE AND MISUSE OF DELEUZE AND GUATTARI'S CONCEPTS IN BERNARD STIEGLER'S PHILOSOPHY

Bernard Stiegler's contemporary philosophy resounds with the legacy of Deleuze and Guattari's collaborative and solo work. To appreciate this influence, I consider both Stiegler's use and misuse of Deleuze and Guattari's thought. This is of considerable interest to scholars in that it raises the perennial question and prospects of the political in Deleuze and Guattari's thought. On the one hand, Stiegler's use of Deleuze and Guattari's concepts demonstrates how their philosophy can be applied to interpret the paralysis of our historical moment. The potential misuse of their concepts is also equally interesting as it highlights how and why Deleuze and Guattari are all-too-often misinterpreted and caricatured. To undertake the task of understanding the use and misuse of Deleuze and Guattari, I will focus on 1) several concepts shared by Stiegler and Deleuze and Guattari; 2) the crucial distinction between resistance and invention; and 3) the relation of desire to technics. I argue that the inheritance of concepts drawn from Deleuze and Guattari shapes Stiegler's thought, and while his reading of the two philosophers asks timely and critical questions about their political philosophy, it also shows the magnificence of their philosophies in two respects – by highlighting the emergence of a negative, mature Deleuze and the prescience of Guattari's post-media theory.

I. Negative Deleuze

In Stiegler's work we find an update, extension and radicalization of Deleuze's short *Postscript on the Societies of Control* (Deleuze, 1992; Stiegler, 2013). Broadly, Deleuze posits marketing as the effective art and instrument of control. For Stiegler, this tendency leads to a fall in libidinal energy, a corresponding destruction of desire and the emergence of

(uncontrollable) drives. Following Deleuze's insight, desire is described as given over to marketing in the societies of control. On this line of reasoning, consumerism and marketing are now the dominant modes of subjectivation – that is to say, the main progenitors of the bringing-into-being of the subject. Beyond this, in his thesis on the 'art of hyper-control', and through his pharmacology and general organology (the study of the psycho-somatic [organic organs], artificial [technical] and social organs or tools, which co-evolve while remaining mutually co-dependent), Stiegler is tracing the curative or therapeutic capacity of technics. Stiegler stating there is no curative or therapeutic capacity in Deleuze's philosophy of resistance charges Deleuze with political impotence or at worst an 'affirmation of adaptation' to the status quo of the global market (Moore in Howells, 2013, p. 18). Indeed, in his *States of Shock* (2015), Stiegler charges a generation of thinkers in the second half of the 20th century with the 'renunciation of thinking an alternative,' the consequence of which is that a state of affairs without alternatives leads to 'universal unreason' and the 'inevitability of stupidity' (Stiegler, 2015, p. 78). Given this apparent lacuna in the thought of both Deleuze and Guattari, for Daniel Ross the political questions of the current moment are Stieglerian in focus. They are questions of care and of 'improbable courage' (Ross, quoted in Stiegler, 2018a, p. 32). This is a philosophical and political response to the dominant mode of instrumentally-driven reason (non-knowledge or anti-knowledge), in other words, to calculation as such (Stiegler, 2015). Here, Stiegler is building upon Adorno and Horkheimer's critique of instrumental reason in *The Dialectic of Enlightenment* (1947) while applying it to the contemporary moment in novel ways. His political emphasis is not on the negative as such but the improbable or incalculable. Or as Turner explains: "In contrast to this politics of resistance, Stiegler's politics seeks to invent practices of the improbable from within structural limits" (2019, p. 61).

Stiegler develops a perceptive understanding of Deleuze's question of the emergence of control societies as Deleuze saw something nobody else could forecast or anticipate, that is, modulation. For Stiegler, in our times, this has now become a kind of voluntary servitude. Moreover, Deleuze's *Postscript* (1992) should be thus read alongside Guattari's *Three Ecologies* (2010) as it was Guattari who in 1989 posed the question of voluntary servitude in terms of mental ecology. Deleuze and Guattari pinpoint the new

form of control as completely beyond traditional models of alienation and ideology and Stiegler labels this new form of power – hyper-control – which functions through forms of psycho-power or manipulation. For example, the reality of TV can be seen as a conspicuous and domineering device of alienation but modulation now functions further through different platforms and networks and memory capture.

Like Deleuze, who considers the nature of the individual in the *Postscript*, as a newly emerging massified subject at once divisible and split, comprised of sampled data, databases, markets, memory banks, Stiegler is writing against the synchronization and exploitation of conscious minds by marketing techniques. For Stiegler, the crux of the issue is the question of technics and the notion of tertiary retentions, or how memory is stored and recalled, in archives and vast databases. The problem for Stiegler is that he finds a conspicuous lacuna in Deleuze's thought precisely on the subject of technics. I will explore this below to expose the chinks in Stiegler's view. But briefly here, on the question of Deleuze's failure to think technics Stiegler claims: "What is missing in Deleuze, as in all philosophy, epistemology and most of so-called aesthetics, is an understanding of the stakes of tertiary retention, that is, of technics" (Stiegler, 2016a, p. 64). Furthermore, Deleuze and Guattari have no sustained account of how digital grammatization is transforming the reproduction of social, political, cultural and biological spheres. Yet, this is no fault of their own as they were writing "on the cusp of a crucial transformation of machine technology" (Abbinnett, 2019, p. 113):

Stiegler's thought is clearly indebted to Deleuze and Guattari. Their analysis of the grammatization of life through the symbolic forms of the social is the first to theorize the relationship between the machinic economy of the ego and the technological assemblage of the social machine. However, from Stiegler's perspective, their work lies on the cusp of a crucial transformation of machine technology, that is, its evolution into the discrete systems of digital grammatization that have radically altered the nature of social, political, cultural and biological reproduction. (Abbinnett, 2019, p. 113)

While there is an 'echo' of Deleuze and Guattari's history of machinic desire in Stiegler's theory of the technological tendency of human evolution (Abbinnett, 2019, p. 26), and while Stiegler's thought is 'clearly indebted' to Deleuze and Guattari, because their analysis "is the first to theorize the

relationship between the machinic economy of the ego and the technological assemblage of the social machine,” and while Stiegler's analysis is consistent with Deleuze and Guattari as he sees the possibility of ‘spirit’ as manifesting “from the processes of capitalization constitutive of social machines” (p. 27), critics find a lingering and distrustful sense of utopianism in Deleuze and Guattari. Abbinnett explains:

[T]he account of social machines presented in *Capitalism and Schizophrenia* fails to recognize the organological relationship between the evolution of technological programmes, the repressive structure of consumer capitalism, and the contingent forms of desire that arise from the circuits of proletarianized life. Ultimately, their critique of modern control society maintains a kind of utopianism, in which the complicity between capital, technology and Oedipal desire is constantly outplayed by the schizoid formation of the self. (2019, p. 27)

To counter this sense of utopianism and weakness in Deleuze and Guattari, Abbinnett offers a Stieglerian, pharmacological antidote:

If we are to trace the possibility of a counter-hegemonic politics within the evolving technological programmes of hyper-industrial society, therefore, this must be done in relation to the increasingly close relationship between (1) the processes of technoscience and capitalization; (2) the labile constitution of the ego within the virtual-aesthetic systems of the culture industries, (3) the prosthetic reproduction and supplementation of the human organism: and (4) the evolution of self-directed artificial intelligence systems.

The possibility of the war machine, in other words, is constituted through the experience of sensory and noetic degradation that is produced through the capitalizing power of technoscience, and the new possibilities of self-expression opened up by systems of virtual connectivity (*hypomnemata*). (Abbinnett, 2019, p. 113)

Yet for Stiegler, Deleuze is among the first to note the initial effects of new governmental forms, and following on from this insight, it is the mature Deleuze *qua* political thinker who adopts a more negative, critical perspective which Stiegler finds of interest. Stiegler writes: “Starting from 1990, at the moment when he takes up the theme of the dividual that I believe comes from Guattari, he finds it hard to say yes” (Wambacq, Ross

& Buseyne, 2017, p. 142). Towards the end of his life, Stiegler suggests, Deleuze succumbs to the 'negative'. The quintessential (and often caricatured) philosopher of affirmation is late in life a 'negative Deleuze'; he becomes a thinker aware of what is possible and impossible in his own time. Still, Stiegler is a good reader of Deleuze and resists this unthinking distortion of Deleuzian philosophy into a Panglossian, parodic, slap-happy enterprise. And yet, he finds in Deleuze's thought a glaring lack of philosophical weapons or what he calls negentropic tools to reinvent politics (Bradley, 2017). Stiegler insists:

I think we have to reinvent completely what is politics... we have to reinvent hope, because without hope we do not have politics. And today people have no hope. (Feenberg & Stiegler, 2017)

Cantankerous and complaining, late Deleuze is more negative but wiser in his old age, finding less blind hope, less unthinking affirmation of desiring machines and schizo flows. Now with hindsight, the Deleuze of *Anti-Oedipus* appears to belong to a bygone age. In the late Deleuze, there is less emphasis on the project of schizoanalysis and less faith in the figure of the schizophrenic, the 'exterminating angel' of capitalism celebrated in Deleuze and Guattari's seminal work (1983, p. 35). Deleuze takes a little step back and pauses for thought. In an interview with Judith Wambacq and Bart Buseyne, Stiegler is perceptive in discerning this caution and claims:

I believe that in the interview with Toni Negri on control societies, he becomes critical of what he and Guattari had opened up in *Anti-Oedipus*, *A Thousand Plateaus*... I think he begins to take a little step back. He has aged, and he perhaps finds a little limited this kind of yes to the capitalist 'desiring machine', which had become more and more an attitude and less and less a thought. (2017, p. 142)

The emphasis for Stiegler is less on desiring machines and the schizophrenic process and more on the drives which turn destructive, violent and nihilistic in control societies, when unchained from desire as such, when desublimated – a concept he reworks from Herbert Marcuse. That Deleuze and Guattari ultimately and equally confuse the drives, desire and the libido is, for Stiegler, primarily because Deleuze has not only no theory of technics but also, importantly, no concept of organology, which is to say, no

sufficient explanation regarding the nature and historicity of technical invention from which desire itself springs forth.

For this reason, the concept of desiring machines becomes increasingly anachronistic as it cannot make sense of the contemporary world of technics. Indeed, as Stiegler rethinks *tekhnē*, which usually denotes skill in terms of technique which manifests in all aspects of human life, the limitations of the desiring machine concept become apparent. Or as Gerald Moore puts it: "By offering no more than notional 'resistance' to their collapse, Deleuze and his generation underestimate the importance of constructing the artificial environments in which we technically *ek-sist*" (Howells, 2013, p. 26). Here Stiegler is coupling desiring machines to the history of technics rather than to the machinism of Deleuze and Guattari. This is why Stiegler is skeptical about their schizoanalytic project. However, being a keen reader of Deleuze, he decisively argues that a purer, negative Deleuze would affirm invention rather than resistance. And this is precisely the gauntlet Stiegler takes up when he collapses the distinction between invention and resistance. Yet, the orthodox defense that Deleuze equates resistance with creation ('to create is to resist' in R for Resistance as is discussed in *L'Abécédaire*) is rejected by Stiegler, who defends Deleuze but adopts a different sense of invention, and indeed at times sounds more Guattarian while granting the organological the form of a new *agencement*. As he explains:

He is no longer Deleuzian enough for my taste when he begins to talk about resistance. Now, it is precisely when he begins to say, 'there, there is the negative', that we should not resist, but invent. To be worthy is not to be passive or resistant... but to be inventive: it is to propose a new *agencement*... which must be organological, that is, enabled by technical invention itself, and as the reality of repetition, from which we die and which saves. (Wambacq, Ross, & Buseyne, 2017, p. 143)

Noetic beings and desire

Demanding a fundamental 'rupture' with the culture industries that serve control, Stiegler's argument extending Deleuze's societies of control thesis is that conscious or unconscious expectations or protentions – fears, desires, hopes, beliefs, motives, reasons and dreams – remain the preserve of the culture industry and are overseen by the marketing and entertainment

industries. Simply, they are the lifeblood of societies of control. The necessity of uncertain expectation or the Greek *elpis* (ἐλπίς), which signifies both hope and fear, the last item in Pandora's box, that is to say, both positive and negative protentions, must be protected from the worst excesses of the capturing of attention by media industries. Stiegler's argument is that expectation as such gives sustenance to the flourishing of desire and functions to curb the worst excesses of the drives which are channeled, guided and exploited by the marketing industries.

Through an interpretation of Freud's theory of libidinal energy and economy, Stiegler (2013) writes that the drives must be rebound and sublimated – connected to desire as such – in order to encourage transindividual circuits of desire, that is, circuits of desire between the generations. Stiegler is aware that through the industrial exploitation of the drives, there is an ever growing threat of the planetary dissemination of stupidity (*bêtise*) or 'baseness' in the Deleuzian sense. So again, in the loss of sublimation, there is a danger that desire itself can regress to the level of the drives. There is hence a passage from control to uncontrollable societies. Stiegler explains this point arguing that if noetic beings – mindful souls, or those capable of care for the future – regress to the level of the drives the consequences are ominous and indeed horrific:

[C]ontrol societies exploit that tendency of noetic beings to regress to the level of the drives, to that level at which they become furious. How could it be, then, that control societies are not domesticating societies? How is it that this 'control' fails to make possible the submission of the human beast? The answer is that when human beings are controlled, and when this control deprives them of their desire, that is, their singularity, they become bestial and furious, in the sense that their drives are unleashed, until eventually they become radically uncontrollable. (Stiegler, 2013, p. 11)

Whereas sublimated desire is creative of 'long circuits' of transindividuation, a concept which Stiegler adopts and modulates from Gilbert Simondon's philosophy (1989), drives bypass sublimation and short circuit the creation of new desires. There is a closing off of desire, hope and dreams as a consequence. In this absence, the expectation of the future is handed over to the marketing industries. If in control societies, psychopower and 'massively toxic psycho-technologies' guarantee the control of

behavior, Stiegler asks, in what sense is the production of industrial temporal objects (cinema, Youtube, on-demand radio etc.) a crucial element in societies of control? He argues that they function to capture, mould and modulate consumer attention; they serve the marketing industries that have become the purveyors of desire. Here Stiegler concurs with Deleuze and Guattari as they deliver their verdict in *What is Philosophy?* (1994) that the marketing industries can never be the real creators of concepts.

But when it comes to cinema and the question of control, there lingers an important difference, because, pharmacologically, Stiegler will say that cinema itself retains the capacity to open up new protentional possibilities, futural potentialities, on the one hand, and also new ways to control desire, for better or worse, on the other. This he derives from Deleuze as we shall see below. Indeed, in *Technics and Time, Volume 3: Cinematic Time and the Question of Malaise*, Stiegler (2011) argues that in the cinematic and televisual era of tertiary retentions, we witness hitherto unheard-of protentional possibilities.

...the most shameful moment came when computer science, marketing, design, and advertising, all the disciplines of communication, seized hold of the word concept itself and said: "This is our concern, we are the creative ones, we are the ideas men! We are the friends of the concept, we put it in our computers." (Deleuze & Guattari, 1994, p. 11)

Quasi-causality

Invention, even more than resistance in the Deleuzian sense, is a central concept in Stiegler's thought because resistance is determined as negative and reactive. On the other hand, invention creates an event and the possibility of bifurcation emerging from quasi-causality, a concept which Stiegler draws from Deleuze's *The Logic of Sense* (1990). While it is beyond the scope of this chapter to fully explore Deleuzian quasi-causality (see Roffe, 2017), we can say at least that the concept is essentially tied to the notion of becoming and can be understood as the subversion of formal, material, efficient and final causality (Bankston, 2019, p. 47). Deleuze invokes a sense of immanent causality to explore the formation of ideal events on the one hand and the sense of heterogeneity which intercedes between the actual and the virtual on the other. We can understand this as

the counter-actualizing causality of ideal events or becoming as the counter-actualizing of the lived present.

We shall consider quasi-causality more in a moment but let us look at invention a little more. Invention, Stiegler claims, possesses negentropic potential, that is to say, it brings forth that which cannot be predicted or anticipated from closed, entropic forms of calculation. Negentropy is the ‘organization of resistance to collapse’ (Moore in Howells, 2013, p. 26). In Stiegler’s argot, invention resists entropy or the closing off of possibility itself. This is consistent with his concept of general organology, which we can say is accommodative of Deleuzian concepts of apparatuses of capture, control, and modulation. Stiegler reads societies of control and uncontrollability through the concepts of the *pharmakon* and quasi-causality, desperate to find a way beyond the stark reality which confronts him. Led by their very own internal disposition, self-destructive logic and tendency, control societies are by their very nature unsustainable because such a societal structure exhausts its own viability, reliability, engagement, trust and belief. Control necessitates techniques of desubjection and disindividuation – ripping the subject and individual to bits – and in so doing confounds the production of new subjectivities. This process is designated disruption (Stiegler, Jugnon & Nancy, 2018) or the ‘generalization of barbarism’, that is to say, the nihilistic tendency which accelerates societal disintegration. In summa: madness. In Stiegler’s thought, the loss of desire, the spread of symbolic misery (Stiegler, 2014), and the very proletarianization of thought, whence combined, subjects the lived body to a state of permanent self-control. In other words, consumer cultures of communication, mass and social media increasingly become sites of self-monitoring, marketing and communication. Byung-Chul Han maps out this tendency too (Han & Butler, 2017, p. 62): “The expansion of Web 2.0, the Internet of persons, to Web 3.0, the Internet of things, is bringing digital control society to completion. Web 3.0 has made it possible to log life in every aspect. Now, the very things we use every day are also surveilling us.” What Stiegler says about the role of surveillance and governance clearly extends Deleuze’s perceptive observations.

In his search for the re-possibilizing of the planetary (material) ‘ecology of spirit’ (2010, pp. 82–98) in *What Makes Life Worth Living*, Stiegler invokes Deleuze’s concept of quasi-causality, thinking the concept in terms

of the organology of the pharmakon itself. We shall understand the concept of the pharmakon as one of both poison and remedy (medicine). Stiegler derives his reading of technicity and the pharmakon from Plato's *Phaedrus* and from Derrida's interpretation of the text. Rethinking Socrates' injunction against writing (itself a form of technology), that is, as the enemy of memory and thought itself, Stiegler's ethical prescription is that technology or technicity as such is a pharmakon; it is a poison which has curative capacity. Stiegler is arguing that quasi-causality can be inverted or transformed by the heteronomy of the pharmakon. As Turner insightfully argues, knowledge is not external to stupidity but proper to knowledge itself, proper to the 'impropriety of knowledge' in the language of Stiegler (Turner, 2016, p. 7).

Writing in the manner of a symptomatologist of his age in the sense of which Deleuze speaks (2009), Stiegler is challenging what he finds to be a profoundly nihilistic present. Indeed, he says, and again following the innovations in Deleuze's thought, the question of the future is the question of the 'quasi-causal production of alternatives' (Wambacq, Ross & Buseyne, 2017, p. 139). The concept of quasi-causality is derived from Stoic philosophy and introduced by Deleuze in the beginning of *The Logic of Sense*. Deleuze uses this concept to rethink the nature of states of distinct things, quantities or qualities and understands the concept of quasi-cause as accounting for surplus effects. The quasi-cause accounts for the very excess of the effect over its corporeal cause. The effect is thus irreducible to precedent causal conditions. For Roffe (2017), the concept of quasi-cause helps to make sense of other concepts in Deleuze like the virtual and the intensive. The concept has two senses in Deleuze's thought: "In the *Logic of Sense*, quasi-causality is a feature of the virtual; in *Anti-Oedipus*, it is a feature of the intensive, there where there appears to be no element of virtuality in play" (p. 290). This is important because, in Stiegler's thought the concept captures another sense, that is, the coming of the unforeseeable, the incalculable, and the singular. It is here that we can clearly see the change in meaning from the virtual in Deleuze to that of the improbable in Stiegler. The 'quasi-causal' is an exit strategy from material causality for Stiegler, who, given his pharmacological predilections explains quasi-causality as being worthy of the poison as well as its cure. Further, and again adopting Deleuze's language, what wounds and weakens is also fecund and

laden, according to Stiegler, it is a chance to care, which is itself a pharmacology and therapeutics. Simply, one must be worthy of such a possibility, of the risk and chance. For Stiegler, this is what is ‘magnificent’ in Deleuze (Wambacq, Ross & Buseyne, 2017, p. 142):

There is no salvation, and it is not a question of being saved, but of being worthy. This is what is magnificent in Deleuze. (Wambacq, Ross & Buseyne, 2017, p. 142)

This is interpreted as a question of being worthy of technics, of the accident, of what gives and takes. This is why Deleuzian thought is timely and remains thought-provoking. Acknowledging kinship with Deleuze’s thought, Stiegler argues that Deleuze opens up a ‘pharmacological’ perspective in *Difference and Repetition* – and again this is a question of the wound and chance as such. Sounding vaguely like the poet Rumi, who says the wound is where the light enters you, which is to say, the wound is where the truth enters you in the sense that awareness of pain is the opportunity to bring illumination and freedom, Stiegler interprets the sense of the wound in Deleuze’s sense of repetition and death, that is, as what saves and heals (Deleuze, 1994, p. 6).

Negentropic Principle

Stiegler invokes what he names a negentropic principle to counter the rise of stupidity or ‘baseness’. This we can take to mean the event as a singularity. In asking what kind of quasi-causality can be invented beyond the enframing tendencies of Big Data operations, the network effect and social engineering, Stiegler is addressing forms of individuation, which is to say, the way the human being is co-constituted with and through not only technology, but also the arts, and in different philosophical, science and political fields. In this series, art as technics has a central role *vis-à-vis* the strategy of invention. Again, the pharmakon here is tied to the notion of quasi-causality. For Stiegler, the question is how to engineer an ‘art of control’ which can forecast or anticipate what Google with its entropic tendencies cannot. This would be to create events beyond algorithmic prediction, to make a bifurcation which cannot be anticipated according to the logic of the dominant paradigm or algorithm. And for Stiegler, Google

is an entropic enterprise as it is essentially curtailing diversity in the act of defining the nature of possibility itself. For example, despite the 'incredible linguistic' (Feenberg & Stiegler, 2017) capacity of Google, the search engine and its services produce a process of entropy in language. As a consequence Google is effectively 'destroying language' (Feenberg & Stiegler, 2017). Stiegler's positive pharmacology is concerned with the subjectivation process and knowledge production in impossible-to-control digital communication networks. Stiegler is arguing for a new politics of digital production, to counter the loss or proletarianization of knowledge. Indeed, he is right to note this as countries across the globe are witnessing a phase change in the way digital media (de)forms and controls new subjectivities. Like the authoritarian impulse enacted in state-led surveillance and systemic control, the new panopticon of control is managed through perpetual surveillance and voluntary servitude. Countering this trajectory, Stiegler's point is that unpredictable negentropic bifurcations can enrich knowledge, rendering it more complex and irreducible to the streamlining of intelligence. The negentropic principle is thus a strategy of differentiation and diversity as it affirms the reconstruction of the faculty of reason which, according to Stiegler, has been devastated by Big Data infrastructure and operations.

As such, Stiegler demands a new therapeutics of the pharmakon. The art of control is thus a strategy of invention or imagination. It offers a path beyond resistance and reaction. Considering questions of Big Data, the exteriorization of memory, and the exploitation and expropriation of memory by capitalism, Stiegler asks how new connections can be made between the body, the mind and desire when global brands such as Google and Amazon and Facebook have become essentially marketing corporations and have effectively colonized the drives. In summa: he is critical of the way social networks manipulate and destroy societal relations. In control societies, Stiegler claims, psycho-power now guarantees the control of behavior and therefore police-science and State-science have been enforced at the level of the unconscious through the rule of management and marketing. It is clear that Stiegler significantly updates Deleuze's postscript to address the passage from discipline to modulation (by the mass media), and from the individual to the dividual.

But from his pharmacological perspective, there is the possibility of inventing weapons or tools beyond these new forms of control. For Stiegler, the sharing of knowledge by workers and users on the Internet is a countermeasure to the proletarianization of knowledge, and the short circuiting of psychic individuation. For example, Stiegler finds in the free software movement the pharmacological possibility of a new political vision of the future, a contributory economy (similarly Guattari finds this sense of contribution in Radio Alice etc., see Berardi, 2008, p. 31). What is imperative for Stiegler is that cultures of contribution carry transindividual potential, that is to say, they carry the capacity to restore social relations. Moreover, while the digital in the new era of organology retains the pharmacological potential to reconstruct circuits of transindividuation, Stiegler calls for, following Timothy Berners-Lee, the invention of new non-marketing, non-consumer-based architectures of the World Wide Web. Rallying against symbolic and spiritual poverty and the reign of destructive drives, and insistent, following Deleuze, that we must continue to 'believe in this world' (Deleuze, 2005, p. 172), Stiegler demands the invention of new, actual, functioning weapons to counter the marketing tendencies and effects of Big Data companies and social networks.

Optimism and the Symptomatology of Nihilism

Thus far, we have addressed Stiegler's interpretation of Deleuzian control societies. Let us now look at Stiegler's consideration of the distinction between technics and the machine. According to Stiegler, there is a trace of unproductive optimism in Deleuze's work with Guattari (from *Anti-Oedipus* to *A Thousand Plateaus*). This is because the revolutionary potential of schizo flows is posited as vying with the triangulation of capital, technology and Oedipal desire. This is now forlorn, Stiegler argues, because Deleuze and Guattari conspicuously fail to set out a theory of technics: to recognize the organological relationship between the evolution of technological programs, the repressive structure of consumer capitalism, and the contingent forms of desire bound with proletarianized life. In other words, as Stiegler says in *What Makes Life Worth Living*, Deleuze 'does not enable us to think the relation of desire and technics' (2010, p. 138). Why is this significant? For Stiegler, the concern with libidinal materialism and the

libidinal economy is a question of how to transform the drives and libido into new transindividual circuits or trans-generational desires. This remains a key problem for Deleuze. In contrast, Stiegler is calling for an ecology of the spirit in order to transform subjectivity itself, to promote care for its natural surroundings – the technological milieu – and for those living creatures which coexist there. Crowley clarifies the point well: “Stiegler’s pursuit of what he calls ‘an ecological politics of spirit/mind... commits him to discerning the possibilities for creative individuation offered by any given technology, over and against the forms of exploitation it may also make possible” (Howells, 2013, pp. 130-131). My point is that this is where Stiegler resonates with Guattari in *Chaosmosis* – in considering the resingularizing of subjectivity and the development of new forms of sensibility to the world, society and cosmos. Stiegler names this the revalorization of existence. At root the problem for Stiegler is how to imagine and invent new possibilities in and beyond the societies of hyper-control. Optimistically, he says it is not too late to transform concepts, theoretical tools, and organizations to manifest new forms of sensibility and new ways of living. This I take to be an essentially utopian and Guattarian influence and inspiration. This is where we find the connection between negentropy and the Nietzsche-inflected transvaluation of all values. When Stiegler speaks of the pharmacology of technology and Guattari of Universes of reference in the post-media era, both critical philosophies share much in common.

The ecology of the spirit can be interpreted as an extension of Guattari’s ecologies of environment, society and the mental in *The Three Ecologies* and thus appears consistent with Guattari’s ‘generalized ecology’ (2000, p. 52). In its Stieglerian iteration ‘generalized ecology’ is termed general organology (Hörl & Burton, 2017, pp. 26-27). Importantly, one can argue that ‘generalized ecology’ as envisioned by Guattari would extend general organology to the cosmological level, questioning the biological, the geographical, and the overall question of cosmic systems and processes and facing the Anthropocene – the ‘shock we are given to think’ (Hörl & Burton, 2017, p. 136).

Sleight of Hand

We have noted Stiegler's deftness and skill at appropriating Deleuze's and Guattari's concepts but his challenge to their work has a crucial, conspicuous flaw. The crucial distinction that undermines Stiegler's critique of Deleuze and Guattari is of course between machines and *technē*. My argument here is that the concept of the machine or the machinic does not depend analytically on *technē* as such. Stiegler therefore misses the essential point of Deleuze and Guattari's whole enterprise. Deleuze and Guattari are not primarily writers of technology or technics but philosophers of the machinic or at least the machine. This is because they are concerned with the machinic, with *agencement* or assemblages, with the function of assemblages as multiplicities. The machinic is first philosophy, not *technē*. Simply, the assemblage is never purely technological. Rather it is always a question of desire rather than ontology as such. Or in Guattarian terms, Integrated World Capitalism is not only a technological matter but a machinic one. The machinic is a more encompassing term than the technological. It pertains to the productive interaction of a multiplicity of elements – environmental, the social, the individual, the molecular, the unconscious and so on. The machinic is granted primary ontological importance, while the concrete, singular instantiations of technology have a secondary role. Erich Hörl (2014) makes the point that Guattari's machinic theory emerged from the 'originary connection' of desire and technics: "Guattari has reformulated his machinic theory of desire as a question of subjectivation under media-technical conditions and he has postulated as part of this project nothing less than the originary connection of desire and technics." The point here is that the machinic not technics is the concept through which to think the technological machine as one of machinic *agencement*, composed of autopoietic and allopoietic structures (Guattari, 1995). Moreover, we can say that machinery *per se* need not be construed as purely technological. For example, tool use (a technical object) presupposes a machine (abstract machine) with social dimensions. If this is the case, any machine is social before it is technical. Why? Technical machines are tied to more complex assemblages overseen by the formative power of a distinct socius. Technology as such assumes a social form in this sense. So Stiegler's criticism of Deleuze and Guattari for having no