Chapter 3: Digital Pharmacology: Stiegler

3.1 Going beyond Rousseau with Rousseau

The reconstruction of Rousseau serves as a useful conceptual framework to interpret Stiegler's conception of pharmacology. On the one hand, some parallels can be found which help to shed light on both Rousseau and Stiegler. On the other hand, against the background of Rousseau's writings we can see more clearly what is specific about a *digital* pharmacology and how Stiegler theoretically goes beyond Rousseau in order to get a view of this current form of techno-cultural evolution.

Four basic similarities stand out: first, there is a certain parallelism in the *basic assumptions* about social development. Both assume a co-evolution of technological, cultural and psychological development. In Rousseau's work, the unstable equilibrium of the state of nature is disturbed by a series of natural disasters, which are necessary for cultural-technological adaptation, and which irreversibly trigger the process of civilization in all its ambivalence.[1] Stiegler conceptualizes this development through the interaction of three levels of organs — technical, social and psychological organs

1 Stiegler himself takes Rousseau as a point of departure in his Technics and Time, vol. 1: "Rousseau's narrative of the origin shows us through antithesis how everything of the order of what is usually considered specifically human is immediately and irremediably linked to an absence of property, to a process of 'supplementation', of prosthetisation or exteriorisation, in which nothing is any longer immediately at hand, where everything is instrumentalised, technicised, unbalanced" (p. 133).

— in the development of which the technical organs are something like the pacemaker.[2]

Every development spurt causes a dis-equilibration of the balance of these three organ levels, which is at the same time the germ of both decay and further development — the basic pharmacological figure. While further development means that the new technical organs are appropriated on the psychological level and embedded on the social level (*adoption*), there is a risk of decay if the psychological and social organ levels merely adapt reactively to technological changes (*adaptation*). Thus for Stiegler, technologies are never ever inherently pathological or harmful, but always only the forms of life in which they are embedded. In view of the profusion of digital technologies that is characteristic of the present, however, it seems as if it were becoming more and more difficult to adopt technology in a productive and appropriate way. In a nutshell, the problem for Bernard Stiegler is that technical inventions which operate at "lightning speed"[3] — a phrase he uses repeatedly — outpace cultural adaptation[4]. It seems as if people can do nothing but react to an ever-increasing stream of technical innovations.

A second parallel exists in terms of the *consequences* that this disequilibrating brings about in the respective contemporary societies. Both Rousseau and Stiegler belong to the camp of cultural critics who decipher the epoch-typical suffering of people as social pathologies. The phenomenon of *divertissement*, of confusion caused by an overwhelming amount of input, of a huge variety of stimuli, seems to be a common ground. What vanity is to Rousseau, attention disorders and various forms of addiction are to Stiegler. He characterizes our society as an "addictogenic society", where the "drive-based tendencies are systematically exploited while its subli-

2 For a detailed reconstruction, see Abbinnett, Ross: The Thought of Bernard Stiegler. Capitalism, Technology and the Politics of Spirit, London: Routledge 2017, pp. 37–63.

3 Stiegler, Bernard: The Age of Disruption. Technology and Madness in Computational Capitalism, Cambridge et al: Polity Press 2019, p. 7.

4 B. Stiegler: Technics and Time, p. 15.

matory tendencies are systematically short-circuited"[5]. For Stiegler, these processes culminate in a loss of "attention", which is not only visible in the literal attention disorders as an individual psychological problem, but also in a loss of civility in social relationships. Attention, i.e. the ability to focus intellectual faculties and to relate them to non-existent objects, counterfactuals, ideas, values, is for Stiegler the central human faculty that enables a productive use of technology as opposed to a merely reactive one.[6]

If social pathology is the object of criticism, a state of health must be conceivable as a normative corrective. This is the case with Stiegler. In line with Rousseau, who does not understand the normal and the pathological as opposites, Stiegler defines health as the creative handling of toxic dispositives:

> When experiencing the pathological, life is normative: it invents states of health [...]. Health is characterized by the ability to transcend the norm that defines what is currently normal, the ability to tolerate violations of the usual norm and to introduce new norms in new situations.[7]

Here a third fundamental parallel to Rousseau becomes clear with regard to the characterization of the endangered intellectual capabilities, the *proprium humanum*. For Rousseau social progress threatens the authenticity of the person and their will, i.e. ultimately their ability to desire. Inauthentic forms of sociality and social comparison as the basis for the definition of what is individually desirable lead to the development of false passions based on an unleashed imagination. Stiegler's criticism aims in a related direction. In a slightly different terminological diction informed by psychoanaly-

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5 Stiegler, Bernard: What Makes Life Worth Living. On Pharmacology, Cambridge et al.: Polity Press 2013, p. 27.

6 See in particular: B. Stiegler: What Makes Life Worth Living, p. 82.

7 Stiegler, Bernard: "Licht und Schatten im digitalen Zeitalter", in: Ramón Reichert (Ed.), Big Data. Analysen zum digitalen Wandel von Wissen, Macht, Ökonomie, Bielefeld: transcript 2014, pp. 35–46, p. 43.

sis he employs the conception of a "libidinal economy of desire"[8]. For him the ability to pay attention is also part of the ability to desire: it creates desires and enables their sublimation — an ability that is almost completely regressed in addictive behavior.[9] The conceptual framework of general organology[10] allows Stiegler to place "desire" and the technical environment in a fundamental relationship of co-constitution: desire is created by "tools" with which one constructs a future for oneself[11]: the plasticity of the drive structure is formed depending on the available tools that enable satisfaction in the near or distant future. Technologies that systematically guarantee short-term satisfaction, as many digital devices do, outsource this to the technical organ: the result is "exteriorization without return — that is, without re-interiorization"[12].

Fourth, both Rousseau and Stiegler alternate between homeopathic and allopathic remedies when they outline *possible solutions* to the pharmacological question. We will describe this difference in more detail later; however, it seems helpful to note that both Rousseau and Stiegler think that the remedy for intoxication could be based on applying either a more skillful dosage or different *pharmaka*. This would, of course, imply that the "loneliness" of the "*promeneur solitaire*" in his last writings could also be read as a *pharmakon*.

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8 B. Stiegler: What Makes Life Worth Living, p. 24f.; see also Stiegler, Bernard: "Pharmacology of Desire: Drive-based capitalism and libidinal dis-economy", in: New Formations 72 (2011), pp. 150–161.

9 "The formation of desire is characterized by addiction when adhesive libido attaches itself to pharmaka that generate rhythms and expectations of such immediate reward that the focus of attention becomes narrowly fixated on the present." (B. Stiegler: What Makes Life Worth Living: p. 25,).

10 Stiegler, Bernard: "Elements for a General Organology", in: Derrida Today 13 (2020), pp. 72–94, DOI: 10.3366/drt.2020.0220.

11 B. Stiegler: What Makes Life Worth Living, p. 24–25.

12 Stiegler, Bernard: "Die Aufklärung in the Age of Philosophical Engineering", Computational Culture 2 (2012b), http://computationalculture.net/die-aufklarung-in-the-age-of-philosophical-engineering/ (01.02.2021), p. 10.

While in the four points mentioned Stiegler's pharmacology can be understood as an update and further development of Rousseau's conception, in two regards he goes well beyond Rousseau. On the one hand, he poses the question of responsibility and asks what kinds of social and political actors benefit from the processes he describes as harmful to society. In the case of Rousseau, "society" seems to be an amorphous agent of alienation; Stiegler names the business-models which monetarize the destruction of human attention. He explicitly criticizes the coalition of the actors of financial market capitalism with the entertainment industries, a form of "globalized psycho-power [which] is the systematic organization of the capture of attention made possible by the psycho-technologies that have developed with radio (1920), television (1950) and digital technologies (1990)"[13].

The fact that he understands the grievances as the outcome of exploitation is evident in his replacement of the concept of alienation, which was central to Rousseau, by the term "proletarianization", which he adopts from Marx, but which he removes from its social-historical context and generally defines as the loss of knowledge through the delegation of activities to an artificial organ. The proletarianization of the producer, criticized by Marx as a paradigmatic relationship of exploitation of the industrial workers, is only the first stage of an overarching cultural rationalization process, which Stiegler describes as "a process of generalized proletarianization"[14]. The first stage of the "proletarianization of the producer", in which only the skill (*savoir-faire*) is outsourced to machines, is followed by two further stages, the proletarianization of the consumer by the entertainment industry, which leads to an outsourcing of *savoir-vivre* and, finally, the delegation of thinking and making decisions (*noesis*) to machines in the present through digital smart technologies.

On the other hand, Stiegler can concretize how the technological media change is altering psychological structures by breaking new

13 B. Stiegler: What Makes Life Worth Living, p. 81.

14 B. Stiegler: What Makes Life Worth Living, p. 27.

ground with the concept of "grammatization", which raises pharmacological analysis to a new level. The concept stems from the discourse on grammatology and Derrida's theory on the structuring power of written language,[15] but is expanded by Stiegler in the context of his general organology to an encompassing theory that explains how technological changes reconfigure social and psychological systems: "I have myself extended this concept", Stiegler writes, "by arguing that grammatisation (*sic*) more generally describes all technical processes that enable behavioral fluxes or flows to be made discrete [...] and to be reproduced, those behavioral flows through which are expressed or imprinted the experiences of human beings (speaking, working, perceiving, interacting and so on). If grammatisation is understood in this way, then the digital is the most recent stage of grammatisation."[16] Grammatization thus encompasses all "processes by which a material, sensory, or symbolic flux becomes a gramme"[17] — "gramme" being the Greek term for "written mark".

Elements of grammatization are a *formalization* of hitherto opaque processes by a "spatialization of time" through "materialization"[18]; this results in the *reproducibility* of these processes which thus become objects of control and criticism, hence bringing about reflexivity.[19]

By moving away from the paradigm of writing, Stiegler can comprehend central technological innovation processes such as

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15 On Derrida and Stiegler, see R. Abbinnett: The Thought of Bernard Stiegler, ch. 1, p. 11ff; see also Ross, Daniel: "Pharmacology and Critique after Deconstruction", in: Christina Howells/Gerald Moore (Eds.), Stiegler and Technics, Edinburgh: Edinburgh University Press 2013, pp. 243–258.

16 B. Stiegler: Die Aufklärung in the Age of Philosophical Engineering, p. 5 (English source text in British spelling).

17 Tinnell, John: "Grammatization: Bernard Stiegler's Theory of Writing and Technology", in: Computers and Composition 37 (2015), pp. 132–146, p. 135.

18 B. Stiegler: Die Aufklärung in the Age of Philosophical Engineering, p. 5f.

19 Stiegler, Bernard: "The Most Precious Good in the Era of Social Technologies", in: Geert Lovink/Miriam Rasch (Eds.), Unlike Us Reader. Social Media Monopolies and their Alternatives, Amsterdam: Institute of Network Cultures 2013b, pp. 16–30, p. 25.

the invention of typeface and letterpress printing, but also industrialization, the bio- and nanotechnological revolution[20] and digitalization as stages in grammatization. In contrast to both a deterministic and a constructivist understanding of human-techno-relations, Stiegler's perspective allows one to conceive of them as co-constituted through grammatization[21].

Stiegler's conception of grammatization, together with his critical focus on the economic and political structures in which changes in the technical infrastructure are embedded, provides him with a powerful analytical tool to scrutinize processes of digitalization which are currently unfolding. Three aspects will be reconstructed here in some detail: the grammatization of the "reading brain", the grammatization of social relations and the grammatization of image consciousness.

3.2 Digital Grammatization I or: from the 'reading brain' to the 'twitter brain'

The paradigmatic example of a grammatization process is the series of innovations set in motion by the invention of written language. Stiegler basically distinguishes between two epochs in this overarching process: the introduction of alphabetical writing in ancient Greece, which "opened up the possibility of the *politeia*, of positive law and of isonomy"[22]. And the spread of the written language through the development of the printing press and the associated literacy, first of the bourgeoisie and then of ever wider sections of the population, which led to the Reformation, Counter-Reformation and the Enlightenment, opening a critical space for a reading audience.

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20 B. Stiegler: What Makes Life Worth Living, pp. 116f., 129f.

21 Ibid., p. 134.

22 Stiegler, Bernard: "The Carnival of the New Screen: From Hegemony to Isonomy", in: Pelle Snickars/Patrick Vonderau (Eds.), The YouTube reader, Stockholm: National Library of Sweden 2010, pp. 40–59, p. 45.

In order to describe in some detail how the psychological organ level underwent a profound change in the course of this process, he refers to the text "Writing the Self", in which Foucault introduces writing as a technique of the self, as it was already analyzed by Rousseau as a medium of auto-pharmacological control. However, he does not stop here, but underpins these rather hermeneutic interpretations by hard facts that give empirical evidence to the idea of a "re-writing" of the self.[23] Stiegler takes up Maryanne Wolf's concept of a "reading brain" — a prerequisite, as it were, for the "writing self". Wolf's neuroscientific research has shown that reading changes the neuroplasticity of the brain and enables abstract thinking operations that were previously inaccessible: "In much the way reading reflects the brain's capacity for going beyond the original design of its structures, it also reflects the reader's capacity to go beyond what is given by the text and the author"[24].

With a view to the human faculty of attention, which is central to Stiegler, reading trains a skill that Stiegler describes as "deep attention", based on Patricia Hayles' definition of the term. Hayles describes deep attention as "a precious social achievement that took centuries, even millennia, to cultivate, facilitated by the spread of libraries, better K-12 schools, more access to colleges and universities, and so forth. Indeed, certain complex tasks can be accomplished only with deep attention: it is a heritage we cannot afford to lose"[25].

It is precisely the loss of this capacity for deep attention that Hayles fears in the age of digital reading. Key factors here are the serial consumption of digital snippets of text via Twitter, the distraction from the text content on websites through constant cross-references in the form of colored hyperlinks, the impossibility of portioning a screen text in the form of discrete pages and connecting it with haptic impressions. All of this, according to Hayles, promotes a different, less focused form of attention, which she refers

23 B. Stiegler: Elements for a General Organology, p. 81ff.

24 M. Wolf: Proust and the Squid, p. 15.

25 Hayles, N. Katherine: How We Think. Digital Media and Contemporary Technogenesis, Chicago, IL: University of Chicago Press 2012, p. 99.

to as "hyper-attention". More figuratively, but in much in the same vein, Wolf speaks of "twitter brains" that the digital reader is likely to develop.[26] Despite their respective critical perspectives, Hayles and Wolf are far from seeing hyper-attention as an inferior or privative cognitive mode. In Hayles' view, both modes have advantages and disadvantages. "Deep attention is superb for solving complex problems represented in a single medium, but it comes at the price of environmental alertness and flexibility of response. Hyper-attention excels at negotiating rapidly changing environments in which multiple foci compete for attention"[27].

However, she delivers a clear warning of the danger that deep attention, which is already less developed in the younger generation, could eventually be completely lost — a problem that she sees as a challenge for pedagogy and the educational system. Wolf also subscribes to this view, recommending that children have no contact with digital screens up to age two, and only limited and supervised access later on, in order to leave room for analogous "slow" reading.[28]

In the terminology developed by Starobinski, these recommendations seem to suggest an *allopathic* treatment of the pharmacology of digital reading that maintains a reserve of paper-based reading in an otherwise digitalized world.

As much as Stiegler draws on the analyses of Wolf and Hayles regarding the transformation of the cognitive organ level in a digital environment, he distances himself clearly from their pragmatic solution proposals. In his view, pharmacological analysis must take on a political dimension, and in two ways: first, it is a matter of naming who is responsible for and who will benefit from the changes. This is because, in his opinion, the destruction of deep attention is not

26 Cited after an interview with Maryanne Wolf by Haas, Michaela: "Wir bekommen Twitter Gehirne", NZZ-online, 27.3.2019 https://www.nzz.ch/folio/wir-bekommen-twitter-gehirne-ld.1622968 (10.9.2021).

27 Hayles, N. Katherine: "Hyper and Deep Attention: The Generational Divide in Cognitive Modes", Profession (2007), pp. 187–199, p. 188.

28 Wolf, Maryanne: Reader, Come Home. The Reading Brain in a Digital World, New York/London/Toronto/Sydney: Harper, 2019.

an unforeseen side-effect of digitalization. Rather, the audiovisual (i.e. film and television) and programming industries are systematically targeting its erosion out of commercial interest. And secondly, the cognitive changes always also affect the organization of social coexistence — the psychological and social organ levels are interdependent: according to Stiegler, deep attention is coupled with "the lengths of the circuits of transindividuation [...] Each circuit (and its length) consists of many connections that also form a network, as another constituent of depth, a kind of texture"[29].

Against this backdrop it becomes clear that the question of the digital transformation of the mind cannot be regarded independently of the question of the digital reconfiguration of social relations.

3.3 Digital Grammatization II or: friendship in the 'digital anthill'

How fruitful Stiegler's broad concept of grammatization is for the interpretation of the psycho-social reconfiguration in the digital world can be illustrated by his pharmacological analysis of friendship networks in social media: "[S]ocial networks represent a stage within a process of grammatization, which leads to the grammatization of social relations as such"[30], Stiegler claims. The grammatization of friendship, the most prominent example of which is Facebook, comprises the three levels of grammatization differentiated above, i.e. formalization, discretization and reflectivity. First, friendship is formalized on social networks because it can only be concluded after a request and its confirmation by the addressee. It thus becomes the product of an act of mutual explicit consent. At the same time, the implicit logic of friendly connections is made explicit through social networks and made the subject of algorithmic computing processes that search for common ground

29 Stiegler, Bernard: Taking Care of Youth and the Generations, Transl. Stephen Barker, Stanford, CA: Stanford University Press 2010, p. 80.

30 B. Stiegler: The Most Precious Good in the Era of Social Technologies, p. 25.

among the users and make suggestions for obvious connections. The pharmacological question is whether these transformations lead to an increase in reflectivity, thus opening up a space for a genuine adoption of friendship in the digital era, or in Stiegler's words: whether "in digital, also known as social, networks [they amount to] a *philia* regressing us to the state of insects", or whether "they constitute a novel opportunity to achieve this elusive *philotès* among humans"[31].

Much more than in the field of digital reading, Stiegler sees the potential of a positive pharmacology here: The rules of algorithmic selection and the revelation of the "gramme" of social relationships need not lead to an erosion of the idea of friendship, but could also bring about a new reflective quality in social relationships. For Stiegler, the self-profiling and self-indexing required of Facebook users have the potential to foster "auto-ethnography" and "auto-sociography", which can result in an explication of the social rules of relationality on which the 'real' network of social relationships is based. This level of social rules which establish the logic of the formation of friendships, but also the constitution of the individual participant, is what Stiegler calls "transindividuation". Processes of grammatization make these rules reflexive.

As a historical example, Stiegler cites the establishment of a legal understanding of citizenship in Greek antiquity, which was nothing other than the expression of the social reality of the polis as coexistence in formalized friendship:

> [C]itizenship forming is grounded on the descriptive grammatization of social relationships by way of the written script in the service of an intensification of the psychical individuation of each citizen, and through him or her, of the other citizens, leading by progressive extension, to collective individuation[32].

Against this background, Stiegler also sees opportunities for further grammatization of social relationships through social networks: "I do believe that the reflexivity included in the public declaration of

31 Ibid., p. 20

32 Ibid., p. 24

relationships (friendly and otherwise) could lead [...] to the emergence of a process of psychical, collective and technical individuation, which would indeed make for a relationally peaceful or benevolent 21st century, grounded in — if I dare to say — a new benevolence"[33].

What stands in the way of this positive outlook, however, is the data capitalist organization of social networks. Stiegler brands the machine matching of profiles as a form of "surgical marketing"[34], through which friendship loses the status of a relationship that is not subject to utility calculation and falls victim to economic exploitation. The selection rules of digital script mechanisms are anything but transparent: in fact, they disguise themselves so that the networker remains a mere user (subject to rules given by others). In order to unleash the positive potential of the digital in social networking, it would be necessary, according to Stiegler, "[to] reverse the pharmacologic direction of social networks" and "make these networks capable of becoming agents of reflexivity"[35]. Two changes would be required for this. On a technical level, more transparency would have to be created, with the selection rules being determined and designed by the users themselves, as in open-source software programing. But there is a second, social level that comes into play in diagnosing the structure of needs that makes the groundbreaking success of social networks such as Facebook explicable. Digital networks function for the younger generation as "a 'cure' for the lack of social relations, just as games are a relief for the social desert in which young adults live"[36]. This need is intended to be met by linking digital networks back to established social forms: "I believe that the real issue is about the arrangement of social networks with social groups (since a social network without a social group is equivalent

33 Ibid., p. 22.

34 Ibid.

35 Ibid., p. 26.

36 Ibid., p. 28.

to a mafia)"[37]: "we need to create policed, meaning politicized communities of friends in the social networks"[38].

3.4 Digital Grammatization III or: the alphabetization of image consciousness

The change in the cognitive apparatus and culture through alphabetic writing is a paradigmatic case of a grammatization process, but only one case in the larger history of the co-evolution of technology and humanity. Digitalization leads to a discretization of other domains like the *visible*, and this in turn opens up the possibility of developing a new visual literacy enabling the observer to critically analyze images and break them down in order to create new ones from their discrete elements — to 'read' and '(re-)write' images, as it were.[39] In his lecture "The Discrete Image" Stiegler argues that the digitalization of the image, which is resolved by a technical process into a finite number of discrete elements (pixels), in a way yields an 'alphabet' of the visible world, which makes new forms of image perception and image construction possible.

Stiegler's argument is based on the opposition of analog and digital photography, whereby — following Roland Barthes — he ascribes an aura of authenticity to the analog photo, which is evident in the belief "this was ..."[40]. The analog photo nourishes the viewer's already existing tendency towards everyday Platonism[41]. However, moments of discretization are already inherent in analog photography, because in the frame of the photo a specific perspec-

37 Ibid.

38 Ibid., p. 29.

39 Stiegler, Bernard: "The Discrete Image", in: Derrida, Jacques/Stiegler, Bernard (Eds.), Echographies of television. Filmed Interviews, Cambridge: Polity Press 2002, pp. 145–163, p. 162f.

40 Ibid., p. 158.

41 Sontag, Susan: On Photography, New York: Delta Books 1977, pp. 3–24 (chapter entitled "In Plato's Cave").

tive becomes visible[42], which manifests a difference between "image-object" and "mental-image"[43]. This difference is reinforced by the digitalization of photography, because the constructional character of the picture is now made explicit on a technical level and — so Stiegler's hope — is anchored not only on the level of image production, but also on the level of image reception.

Just as reading and writing, i.e. the reception and production of written language, tend to go hand-in-hand, so, according to Stiegler, the alphabetization of the visual domain also offers the opportunity to reduce the structural gap between image producers and image consumers, which is a characteristic of the radio and television program industry.[44] The grammatization of the visual accelerated in the 1980s with technical innovations such as portable camcorders and home video systems. These technologies, which put the generation and processing of moving images in the hands of amateurs, made the discretization of image streams possible for the first time through functions such as freezing the image, slow motion, rewinding etc. According to Stiegler, all these "deeply modify relations to the audiovisual temporal flux, allowing one to imagine the appearance of a more reflective and less consumerist gaze"[45].

Stiegler has spelled out this potential for liberation, especially with a view to moving images (which are even more formative

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42 B. Stiegler: The Discrete Image, p. 155.

43 Ibid., p. 162.

44 The idea of empowering people who have been degraded to consumers through traditional media to self-determined "prosumers" is one of the oldest hopes associated with digitalization. In view of the psycho-technological advancement of digital marketing through innovations aimed at the subtle influencing of users' psychological processes instigated and controlled by big data analytics, such as "micro-targeting" and "affective computing", these early hopes, however, have been dampened. On this see Bösel, Bernd: "Der psychotechnologische Komplex — Die Automatisierung mentaler Prozesse als demokratietheoretisches Problem", in: Zeitschrift für Politikwissenschaft (2021), https://doi.org/10.1007/s41358-021-00283-2.

45 B. Stiegler: The Carnival of the New Screen, p. 41.

than photographs for our imagination and memories), using the YouTube platform as an example. The positive opportunity associated with a provider like YouTube is that it "breaks, precisely, with the opposition between consumption and production, and therefore constitutes the possibility of implementing a new distributed and decentralized network of renewable energy in which everyone could be both producer and consumer"[46].

Similar to the grammatization of social relationships in digital social networks, Stiegler sees a potential for reconfiguring the rules of transindividuation here. On the psychological organ level he hopes for the "production of a new kind of deep attention"[47], while on the social organ level he expects that the "combination of auto-broadcasting, auto-production and auto-indexation can create processes of transindividuation that short-circuit the short circuits engendered by the top-down system of the cultural industries through a bottom-up movement"[48].

In his 2002 lecture on the "discrete image", Stiegler takes a rather techno-deterministic view that appears optimistic with regard to the development of the emancipatory potential.[49] Later, however, he insisted that the liberation could only be the result of a "political battle"[50] which would lead to a replacement of our careless way of dealing with the collective grammatization by collective care: "The therapeutic question is then to know how the discretization can be curative — i.e. constituting an isonomy supporting autonomy — and what the political, cultural and industrial conditions of such care are."[51] We would like to propose the term *cura publica* for this collective curative attitude, in order to emphasize its political

46 B. Stiegler, What Makes Life Worth Living, p. 93.

47 B. Stiegler: The Carnival of the New Screen, p. 56.

48 Ibid., p. 55.

49 Nathan diagnoses an "overweening optimism about digital technology", see Nathan, Usha Manaithunai: On the Possibility of Visual Literacy and New Intentions with Digital Images, National University of Singapore 2011, https://core.ac.uk/download/pdf/48646006.pdf (01.02.2022), p. 10.

50 B. Stiegler: The Carnival of the New Screen, p. 47.

51 Ibid., p. 48.

dimension: there are not only *Public Things*, but there is also, if things go well, a *cura publica*.

Part II: An Interview with Bernard Stiegler

Bernard Stiegler: Elements of Pharmacology

An interview with Felix Heidenreich and Florian Weber-Stein[1]

Concept, analogy, metaphor, art

Q: We would like to start by talking about the concept of *pharmakon* and pharmacology. In our view it is a key-concept in your body of thought, a kind of center of gravity of your philosophical work. It is a very complex term. How did you come across this term? When did you start to use it?

Stiegler: Oh yes, the term is indeed crucial. I developed this concept at the beginning of the year 2000, when I was the head of IRCAM, the "Institut de Recherche et Coordination Acoustique/Musique" at the Centre Pompidou in Paris. Back then, we were trying to understand contemporary music, and I sought to develop the theory of what I call "general organology". We attempted to consider instruments and scores as "organs", but also extended this view to devices like radio-sets or more sophisticated hi-fi-sets. At the time, we needed a common conceptual ground which would allow us to understand music and musical practice in an interdisciplinary setting. Then I enlarged the concept of general organology so as to be able to apply it to everything — not only music, but really *everything*. Every human activity. And this concept of general organology was a kind of methodology for organizing interdis-

1 Stuttgart and Paris, 26th June 2020

ciplinary and transdisciplinary cooperation among representatives of different spheres of thought, for example biologists, anthropologists, historians, philosophers, economists, engineers. The idea was, and still is, that you have three levels of organs: a) biological or "endosomatic" or psychosomatic organs, b) artificial organs — let's call those tools and instruments, technologies — and c) social organizations. We tried to understand how these levels interact. The proposition was to provide a methodology for evaluating the level of toxicity of technology in a specific context. For example, you know that technology for water can be very good in the context of an industrial society, but it can also destroy an economy in India. So, the idea behind "general organology" was to understand how the three levels of organs interact, what the ramifications of specific ways of using organs are. In many cases the long-term effects of new organs can only be understood in hindsight.

So this was the point of departure of the concept. Then I realized that the terms "*pharmakon*" and "pharmacology" might express more clearly what was on my mind. Of course, I was a student of Jacques Derrida and so I used the concept of *pharmakon* in the context of Socrates and his critical writings — but it was not my point of departure. Even though I find, of course, Derrida's text on Plato binding and extremely necessary and very useful and in fact not only useful but magnificent — I nevertheless do not consider it at all sufficient.

Q.: It is impossible to sum up Derrida's text "Plato's Pharmacy" since it is also partly a collage of citations which does not intend to have *one* point or to express *one* argument.[2] However, the text shows a movement in which we understand that the spoken word (*la parole*) is not the perfect, pure or transparent position which allows us to overcome the complexity, ambiguity, and difficulty of writing (*l'écriture*). Plato seems to suggest that writing is ambiguous, dangerous, misleading, toxic. Only the spoken word in a dialogue is capable of really expressing adequately what needs to be said, Plato seems to

2 Derrida, Jacques: "La pharmacie de Platon", in: Jacques Derrida (Ed.), La dissémination, Paris: Seuil 1972, pp. 77–213.

be saying. Derrida, however, shows us that we can never completely leave the cave. We can move from one cave to another, from *écriture* to *parole*, but there is no getting outside the cave, "pas de hors-texte". We wonder if you would agree with this way of describing Derrida's reading of Plato. It also seemed very important to us that Derrida mainly refers to the *Phaidros*, whereas you focus on the *Protagoras*. Why do we end up with a different picture when we take into account the *Protagoras*?

Stiegler: The *Protagoras* shows more clearly the ambivalence, the two-faced character of all *pharmaka*, Prometheus and Epimetheus, intoxication and remedy, danger and help. Derrida was absolutely right to show that Plato was wrong when he thought that with dialectics it was possible to overcome the limitations created by writing. Derrida argued that the general circumstances of writing set the conditions for *critical* writing, so there will never be a really critical form of writing, capable of criticizing from the outside. And there is a systematic problem: with Derrida you don't have any positive discourse on the *pharmakon*. It is a philosophy of deficiency, if you like: there is no positive side to the *pharmakon* for Derrida, and this is a problem for me, because in my view the decisive question is how to transform a poison into a remedy. This is a question for everything, for all kind of artifacts. An artifact is necessarily something that disturbs an equilibrium. The writings of Rousseau reflect such a disturbance, and Socrates' critique of rhetoric could also be viewed as a way of responding to a disturbance of an established equilibrium by the introduction of a new technology or *pharmakon*. However, such a perturbation can be good and even necessary if it is the occasion for producing a leap in individuation, as Gilbert Simondon tried to show in his writings about individuation.[3]

Q: So in your view, Derrida's thinking remains "aporetic" in a specific sense. Derrida himself wrote a text on the *aporia*, which literally means the place where you cannot cross the river, where there is

3 Simondon, Gilbert, L'individuation à la lumière des notions de forme et d'information, Grenoble: Millon 2005.

no *poré*, no ford, no passage.[4] Derrida's thinking always seems to aim to get deeper into the aporia, not to overcome it: the aporia of hospitality, the aporia of friendship and politics, the aporia in our relation to animals.

Reading your work and your dialogues with Derrida we had the impression that you agreed with Derrida's view on metaphysics. You seem to concur with Derrida that "writing" is not something purely exterior, not just a tool we can use or not use. It is a *pharmakon* which enters our bodies, transform our brains. However, you seem to say that there are different ways of "using" the *pharmakon* — and that philosophy has something to say about these ways. The term "using" is maybe inappropriate, because it still seems to presuppose the distinction between inside and outside…

Stiegler: Well in my view, the decisive distinction is between *adoption* and *adaptation*. You might also call it the skillful and the unskillful use, if you like. If you are experienced, you can practice an adoption, you can use morphine as a painkiller, if necessary, for a short period of time, at the correct application rate. However, if you are inexperienced and you just adapt, you might end up as an addict. In our society — in every society — *pharmaka* are necessary, unavoidable. However, to say that *pharmaka* are absolutely necessary is not the same as to be naïve about this necessity. This necessity can be also a very bad necessity in the sense of *anagké* for the Greeks. *Anagké* is the Greek term for fate, the tragic fate. So to deal with the tragedy of this situation we need to instantiate what I call a general organology — the goal of which is to address the conditions of possibility for a positive pharmacology.

Q.: Would you agree that the term or the idea of the *pharmakon* is also put forward in opposition to this idea of the tool, which does not really change me? — I use a tool, I can drop it, but it does not enter my being, whereas the *pharmakon* from the start — and of course scripture and writing are the paradigms — changes me, transforms

4 Derrida, Jacques: Apories. Mourir, s'attendre aux "limites de la verité", Paris: Galilée 1996.

me. It is not like a knife that I can drop; and even if I view the knife as a *pharmakon* I would then see that the knife changes the person that holds it: through having the knife they are a different person than the person they would have been without it. So we would ask if this is an important point in your view. What would be the counter-concept of *pharmakon*?

Stiegler: Well, the term "tool" refers to an object, whereas the term "*pharmakon*" refers to a relationship. In my terminology, therefore, everything can be a *pharmakon*. Everything. Your wife, husband or partner can be a *pharmakon*. Even a theory can be a *pharmakon*. If for example, you are Marxist and you use the theory of Marx in order to navigate through the world, it becomes a *pharmakon*. And this *pharmakon* can become toxic, if it becomes an ideology. In this case you change your relationship to the words, although the theory stays the same.

Q.: We were wondering to what degree *pharmakon* is a metaphor and in what sense it is a concept. We concluded that maybe it is both. It is an analogy, but it also has a literal sense: The claim seems to be that *pharmaka* actually enter, impact and even transform our brains. To say that music is *like* heroin is not just a metaphor, it is also *literally* true: a teenager using heroin and a teenager practicing music will have transformed brains in both cases, impacted differently, of course, but still in both cases we will see the neurophysiological impact. In both cases the *pharmakon* is not exterior to the body, but in the body, in the brain. What is your view on this question? Is pharmacology actually a discipline of reflecting, training, "practicing" our relationships?

Stiegler: Absolutely. Pharmacology is not a theoretical enterprise. Of course, there is theory in pharmacology, but only as it serves the practice of pharmacology. Pharmacology is practical knowledge, a *prâxis* in the way Aristotle described ethics and politics. How do we "practice", for example, the hammer? The hammer is, as you know, an important example for philosophers, for Heidegger and Wittgenstein and many others. The hammer can be simply another tool, just

a device, but it can also be the instrument of a specific culture. And in such a case, the hammer transforms the body and mind of a true craftsman. This is maybe not the case for an unskilled laborer, but it is true for someone who has spent years working with a hammer in order to create specific stones, e.g. a mason. For him the hammer is not a tool, but a *pharmakon*: he feels the hammer in his hand and cannot help being transformed. His tools are his friends, he has known them for many years, knows how they react, how they can help him.

I first realized this when I was trying to understand what happens in the relationship between musicians and their instruments. Arturo Benedetti Michelangeli — the very famous pianist — was particularly known for interpreting Claude Debussy. He is maybe the most important performer of Debussy, since his magnificent interpretations have shown a new Debussy. One day he came to Paris to perform at the Salle Pleyel and I listened to him on the radio. It was a live program. It was a very, very important event in Paris in 1979. He had announced that he would be playing "La cathédrale engloutie" by Claude Debussy, which is extremely difficult to play, a long and very complex piece of music. And he entered the stage at the Salle Pleyel, which was at this time the most important concert hall in Paris. He sat down in front of the piano and he stayed silent, and he just didn't play. One minute went by, then two minutes, on the radio. Then he suddenly said: "My piano is cold." And he stood up and he left the place. It was a scandal, an absolute scandal. All the journalists said that he was just a diva. But I thought: not at all! The piano is a part of himself. And even if it is separate in terms of outward appearances, it's not really separated internally from his own being. And I understood what he meant when he said the piano was cold.

So I think I understood that the relation to objects is essential. It is the case with everything. If you are creating a good relation to a thing, an object, it is in a sense an object of addiction. Donald Winnicott puts emphasis on this at the beginning of his work on the transitional object in "Playing and Reality" (1971); he says on the first page that the teddy bear for the small child is addictive. And the problem is: it's a good addiction, it is a necessary addic-

tion and the 'good enough mother' will be able to tell the time at which it is necessary to consider it a bad addiction and to leave the teddy bear behind. So here the mother practices pharmacology for the child. For me Donald Winnicott is a very important thinker because he shows that the *pharmakon* is a source of the beginning of the construction of the personality and the maturing psychological apparatus. The human mind evolves through the relation to *pharmaka*.[5]

No ontology of *pharmaka*, but savoir-faire

Q: You are employing the concept of pharmacology in such a broad concept that one could almost say that the human condition is pharmacological, not *homo sapiens*, not *homo ludens*, but *homo pharmacans*. You highlighted the fact that the concept is so attractive to you because *pharmaka* can be interpreted as a poison and a cure. So can you say a little bit more about the criteria for differentiating between positive and negative aspects of the *pharmaka* we use? Or is that something which is only possible for us to see in hindsight? Can we differentiate between *pharmaka* that are bad *per se* and *pharmaka* which leave more room for development and adoption instead of adaptation?

Stiegler: No *pharmakon* is bad *per se*. Even the atomic bomb, for example. Why? Because the toxicity and the creativity depend on the situation. That is the accidental character of the situation. This is what is tragic about the human situation: There is always this conflict between Prometheus and Zeus: using too much or too little, at the wrong moment, in the wrong dose. But this is a projection of something that is irreducible in human life. As you know, the god of pharmacy, Asclepius, has two serpents. Snakes are a very common symbol for the ambivalence of a *pharmakon*, because it is at the same time a poison and the remedy. And for thousands of years it

5 This recourse to Winnicott is outlined in B. Stiegler: What Makes Life Worth Living.

has been extremely important to cope with the ambivalence of the snake. This is why you find snakes as symbols everywhere, in China, in Japan, in Siberia, actually everywhere in Africa, in South America, in North America.

So the history of mankind is a constant struggle to practice adoption and to avoid adaptation, to "use" *pharmaka* without abusing them. The two snakes are there from the start.

Q: If a snake can be positive or negative, if even an atomic bomb can be helpful (although we might be hard put to think of such a situation) — then does this mean there is no ontological quality of a specific *pharmakon* at all? The toxicity of substances to us seems very different, and in some cases this toxicity shows itself when we look at large-scale use of different *pharmaka*. If we compare for example the mass use of *khat* in Somalia today and the use of chamber music in Austria in the 19th century, the long term-consequences seem very different. And these consequences seem to be defined not only by the way these two *pharmaka* are used, but also by the ontological character of the two *pharmaka* themselves. This may be an extreme and, in a way, a false example, but for us an important question is: aren't there at least different classes of substances that we can distinguish, even if we don't judge their character normatively or morally? Take, for instance, the case of caffeine and heroin? Both can be misused, but still there seems to be something in the substance itself, doesn't there?

Stiegler: Well, the effects of these substances can depend on the circumstances. I do in fact think that an ontology of *pharmaka* is not possible. This is why Heidegger is still important.

Q: Heidegger who claimed: "The essence of technology is nothing technological." Heidegger thought that modern "technology" was a way of looking at the world, a specific "understanding of Being". So, this could mean that it is not in the things, but in our relationship to the things. For us, speaking from a German background, it is very important to see that in France Heidegger's philosophy of technology is considered important. It is a pity we cannot enter into

the details of your philosophical debate with Heidegger outlined in "Technics and Time, 1: The Fault of Epimetheus". Heidegger's personal pharmacology was rather strict. He had no TV, and would spend months in his cabin in the Black Forest. And there are his remarks on the "world of motorways". The motorway to him seemed to have metaphysical meaning; it was a symbol of what he called the "planetarian movement". Somehow it seems to be difficult not to categorize some *pharmaka* in this way.

Stiegler: I really think that there's no ontology for *pharmaka*. However, there are criteria for evaluating or understanding pharmacological effects. There are, I think, two possible criteria. The first one is knowledge. This may sound simple, but it is not that simple. When you are capable of transforming a poison into a remedy, it is because you have developed a knowledge of this *pharmakon*. And you can tell yourself or other people, "Don't use it, it's very dangerous". This is what many experts do, doctors, or, for example if you are a mathematician you can critically assess the use of geometry in architecture. You can predict what is possible and what isn't, and in order to define the limits of what can be built you can use your skills as an expert. In this first sense, there is something similar to science necessary.

Q: The term "skill" is being used in a certain sense here, right?

Stiegler: Well, a "skill" means that something can be reproduced, trained. It is in a way technical knowledge. The emphasis on skills in modern education should therefore be questioned. OK, some skills are necessary, but there is more. The second criterion is different. I would like to call it "savoir" in French, because "knowledge" in English sounds as if it was just referring to academic knowledge, to a knowing-that. However, for me pharmacology is not at all about academic or scientific knowledge only, but also about everyday life knowledge, about experience, about knowing-how. This is most obvious in sports, for example, or cooking. Or the upbringing of children is also a "savoir-faire". The French term *savoir* covers these two elements.

Q.: "Savoir-vivre" is also about taste, isn't it?

Stiegler: Absolutely. Taste needs to be formed by experience. This is why aesthetic education is so important for our children. Now for me all kinds of knowledge or *savoir* are "negenthropic". That would be a more scientific way of putting it: toxicity is entropy, *savoir* produces negentropy. Heroin-addiction destroys the brain's capacity to produce its own substances and consequently the brain relies on the input of heroin. The brain then is less complicated: it has, if I can put it this way, more entropy. However, if you manage to use *pharmaka* in order to build up complexity, you produce negentropy.

Q.: This is also a very important point in your work: there are entropy and negentropy, dispersion and collection. Digital pharmacy can distract us terribly. However, it is interesting to see that in the history of European culture there is a long tradition of distraction. Some of Mozart's greatest pieces are called *divertimento*. Culture is also very much about distraction, about fighting contemplation in theaters, in opera houses, in the cinema…

Stiegler: Distraction is not *per se* a problem. You are right to claim that many aspects of European culture are *pharmaka* that offer distraction, *divertimento*, and so on. However, distraction becomes problematic when it turns into a large-scale production of what is called "Je-m'en-fous-tisme" ("I-don't-give-a-fuckism") in French: a poisoning neglect, indifference, moral insensibility, the pandemic absence of taking-care.

Q.: That is a mechanism that you described in "Taking Care of Youth and the Generations" as a gigantic machine operating in order to confuse and distract people. We will come back to this topic later. This "art" of using the right *pharmaka* in the right way is what defines the history of mankind. But can we tell what is use and what is abuse? The difference between *adaption* and *adoption* on the one hand seems plausible intuitively; on the other hand, these two modes seem intertwined, often hard to distinguish.

Stiegler: Well, it is an extremely tricky art or craftmanship. In some cases, it is hard to tell. Even heroin was used by artists such as Charlie Parker, John Coltrane or Jimi Hendrix. I don't think that bebop would have been possible without heroin. So even such a dangerous *pharmakon* can be used in order to serve a purpose. And then of course, we have an endless number of examples of the skillful use of *pharmaka*, from the Hopi in New Mexico (who were so important to Aby Warburg) to all sorts of ways of using music, dance, chemicals, tea, coffee, theory, theology — whatever. Anything can be helpful or harmful. In French we call such a situation "casuistique". This term refers to the Jesuit tradition of solving difficult legal or theological questions in a case-by-case approach. There may be some heuristics, but there is no general framework that will deliver ready-made answers.

Q: This almost sounds like an Aristotelean idea of *phronesis* or *prudentia*, practical wisdom.

Stiegler: Well, the difference is that Aristotle could presuppose a well-ordered *kosmos* full of teleology, full of natural, given *teloi*. For him, an ontology of *pharmaka* was still possible. He tried to *find* the right answers, whereas we have to *invent* them.

The subject of pharmacology: auto-therapy

Q.: In this framework there would also be no "point zero", no absolute soberness. Human beings are always in a relation to the world, so there is always an "already", a *toujours déjà*, in pharmacology. Even soberness could become a *pharmakon*. Of course, you know the entire tradition of deconstructing the idea of the Ego and the Cogito and the idea of the sovereign subject in French post war philosophy. There is no "pure" or "sober" Cogito. There is a philosophical question implied here: how should we think the subject of pharmacology?

Stiegler: Well, of course I would agree that autonomy is not possible, but it is possible to take care of oneself, which is, in a way, analo-

gous to an adoption of one's heteronomy. "Taking care" is important to me, *cura*. What I called "savoir" could also be viewed as a therapy. Nietzsche already had this therapeutic vision of philosophy. Of course, we also have to view this philosophy as a *pharmakon*. Derrida's style of deconstruction has become for some people a *pharmakon* by which they are almost intoxicated, which is tragic. They repeat Derrida's style although Derrida himself never repeated anything. Georges Canguilhem in his writings about thought and thinking turning into an ideology has some wonderful descriptions of this tipping-point. Such knowledge not only can, but always will become a *pharmakon* itself. So, in order to answer your question: we don't have to imagine the subject to be a sovereign *cogito* in order to understand that it can have an auto-therapeutic relation to itself; it can practice what Foucault called the care for the self.

Q: I think this is a very important point: that in a way what used to be autonomy in the European tradition — or the idea of the autonomous subject, particularly in the liberal tradition — then becomes "autopharmacology." Autopharmacology is not the same as autonomy, since we are never the complete masters of our *pharmaka*. Would that be a way of putting it?

Stiegler: I completely agree. And I do think that it is extremely important to get these things right. You see, when Derrida was young and published his first books, deconstruction was something very theoretical. Today in France, the contestation of autonomy is a daily experience. Today, everybody knows that there is no sovereign subject. So, the questions of autonomy and heteronomy are posed in a different context. If you adopt a therapeutic point of view, you always operate with the assumption of a quasi-causality. You will never be able to prove what really helps; you have to believe in your empowerment. And you have to try to make good health possible, although you know that in the end you will fail. You cannot "produce" good health, and eventually you will die anyway, but good health is always a possibility.

Q: However, we wondered if you would agree that maybe there's something like a class difference in regard to pharmacology. Different social classes not only differ in their income and wealth, but also in regard to what Bourdieu called "cultural capital". A decisive part of this cultural capital is the competence in using *pharmaka* in a skillful way. What people inherit (or do not inherit) is the skill of pharmacology. Could we re-describe class-stratification in terms of pharmacology? Bourdieu would argue that cultural capital is distributed unequally, and that there are systematic reasons why the children of the internet-managers in Palo Alto are put into Steiner-schools, and protected from digital intoxication.

Stiegler: Oh yes, of course there is a correlation between pharmacological skills and social class. Digital *pharmaka* are poured into society and the skills are distributed very unequally. Some people have to work in call-centers, others don't. There is an analogy to other toxic substances. A higher social status allows you to avoid contact with dangerous chemicals, at least in some cases. Rich people have their personal assistant to do all the e-mailing for them. And of course, there are very unequal options for protecting your children from digital *pharmaka*. However, the correlation is not absolutely clear. It is like in the case of alcoholism, which can be found across the board, in all social contexts. Indeed, the introduction of gin and the following "gin craze" in England had a harder, almost epidemic impact on the lower classes. In particular women were introduced to alcoholism in a new way. Gerald Moore wrote brilliantly about this disruptive change in drinking behavior in England in the 19th century. The impact of gin was incredible. However, gin also affected the upper classes. Evidently, there is also upper-class alcoholism — and there are also rich people who are addicted to their smartphones. I have many friends who are from the French bourgeoisie and even high-bourgeoisie, and they have problems to keeping their fingers from their smartphones. In my view, the class difference is not even so important. I think what has been happening in the last 20 years is a disruptive influx of new *pharmaka* — and in this case there is not so much competence you can inherit.

New *pharmaka* disturb things, and I am not sure that the old class structures can simply absorb such a rapid influx.

The writing self and the digital self

Q.: This is an extremely important point for the idea of digital pharmacology: You claim that we are witnessing the introduction of new *pharmaka* — and that this process can be understood in analogy to historical examples. Could you tell us more about the way you conceptualize the emergence of a digital pharmacology in contrast to a pre-digital pharmacology?

Stiegler: Well, I think we can learn a lot from earlier examples of new *pharmaka* being introduced into a society. The radio is not just a medium that will help you to transmit messages, but when it started to become an element of mass-culture, it changed our hearts and minds. In the 1950s and 60s rock'n roll was a new, a mood-transforming *pharmakon*. And already back then the older generation was appalled by the "yeah-yeah"-music (that was the term back then in France). It's usually the younger generation that absorbs new *pharmaka* right away. So as a mother or a father, you are in a way always too late. Today it is often our children who teach us digital pharmacology. Our non-digital experience may probably help us, but it is not clear in what way exactly. There are other possible comparisons that might help us to understand what is going on more properly.

Q: Maybe we could look at ourselves in analogy to the indigenous people in North America when they were confronted with alcohol. We are not experienced with these new digital *pharmaka* that are coming from California and China (in most cases), and like the First Nations we now have to learn as fast as possible. You seem to be sceptical about the option of using our older experiences with other *pharmaka*. On the other hand, you suggest that we might counter the dangerous new *pharmaka* with something that we know better, older *pharmaka*. In your case this would be the defense of the practice of reading and writing, which in Europe has a long tradition.

Stiegler: Oh yes, of course reading and writing are absolutely essential in Europe. It was very important for me to see in what way the Chinese culture of reading and writing differs from the European. The experience in China made me understand the relevance of Foucault's work on reading and writing more clearly. There is this wonderful text by Michel Foucault about "Writing the Self" (1983).[6] It is a tiny, magnificent text, written only a short time before he died. In Foucault's work on the "techniques of the self" writing and reading play an essential role. It is very important to see that Foucault shows that Seneca's teachings are not about mere erudition, but that they intend to transmit wisdom, the wisdom of using reading in writing in order to take care of ourselves. The way we think, feel, what we are — all this is linked to the *pharmakon* of reading and writing. Foucault described it beautifully, although he didn't use Derrida's term *pharmakon*. Foucault uses the term "governmentality". It is a pity and even a bit ridiculous that Foucault and Derrida just could not discuss things with one another, although there would have been so much to talk about. Modern research shows that Foucault was right. I'm thinking in particular of the book by Maryanne Wolf.[7]

Q: In her book *Proust and the Squid* she shows in what way reading forms and transforms the human brain. She compares the brains of persons who read the Latin alphabet, the Chinese script and the Japanese mixed Kanji writing system**,** and the two-syllable-alphabets. Her research seems to suggest that these three groups of readers actually have almost different brains. So, when Foucault talks about the fact that a discourse "inscribes" itself in the subject ("s'inscrit") we can now see that this is not just a metaphor. The brain actually changes: there is a true neuro-plasticity. You also call this process a process of "grammatization"…

Stiegler: Yes, I do think that philosophy absolutely needs to take this research into account. Reading is an education of your attention-

6 M. Foucault, Michel: "L'écriture de soi".

7 M. Wolf: Proust and the Squid, 2008.

spam, of the way you perceive the world. We should, however, remember that reading used to be considered dangerous and toxic. Up to the 20th century, in many families, parents would tell their children not to get lost in books, not to read so passionately, not to be addicted to books. And then there were of course institutions like the church which tried to control what could be read and what couldn't. The priest would tell you how to use the *pharmakon* of reading and what not to read. It is very important to understand that the Bible can be seen as a dangerous, even toxic *pharmakon*. There is a text by a Portuguese Jesuit priest saying explicitly that the most powerful substance that was brought to America was the Bible. The term "grammatization" refers to a form of constructing or creating subjects on the basis of reading and writing.

Q.: In Germany, there are several books which propose a "bibliotherapy". For every difficult situation in life they recommend a specific novel. Books are "prescribed" in order to self-medicate your moods.[8] There is even an Italian editing house, Mondadori, with an advertisement saying: *Un libro per ogni emozioni* — a book for every emotion. To view the Bible as a *pharmakon* would also continue the line of thought of Foucault. You explicitly refer to Foucault, but you propose talking about "psycho-power" instead of "bio-power". Foucault talked about the way institutions such as the military or schools form our bodies, and produce a memory of the flesh. In contrast, you emphasize the absence of discipline in contemporary psycho-power: power by distraction and confusion, not by discipline. We were wondering to what degree this perspective addresses a general tendency.

Stiegler: Foucault's analysis of bio-power is very important to me. His reconstruction of disciplinary power, and even his description of neoliberalism, however, describe a society which is not the one we

8 Berthoud, Ella/Elderkin, Susan, with Bünger, Traudl: The Novel Cure. An A to Z of Literary Remedies, Edinburgh: Canongate Books 2013.; Schönberger, Margit/Bittel, Karl Heinz: Die literarische Notapotheke: 100 Romane für alle Lebenslagen, München: Knaur, 2014.

live in today. In his perspective, power is all about the optimization of production: schools, universities, the job market, self-marketing — all of this tries to create a subject which is willing and able to produce to the maximum. In "From Bio-power to Psycho-power" I tried to show that we live in a different society. Today we live in a society which tries to maximize consumption; psycho-power produces not primarily discipline, but confusion, carelessness. Foucault cannot help us, I'm afraid, to understand in what way psycho-power tries to cut the links between generations. Our cultural heritage is attacked because it prevents us from enjoying maximized consumption.

Q.: Your defense of the European tradition of reading and writing the self could be pushed one step further: we are currently completely losing the tradition of "learning by heart". The generation of our grandparents knew dozens, if not hundreds, of poems by heart. Is that another *pharmakon* we might rediscover? Could that be an antidote to digital dementia? Or would that just be a case of regressive nostalgia?

Stiegler: To have several *pharmaka* at your disposal is definitely an advantage. Not to mention older *pharmaka*, and not losing our knowledge about them, which in my view is essential. This is not a reactionary or conservative point of view. I do not claim that older *pharmaka* are *per se* better than new ones. The ethics of taking care is neither left nor right.

Q.: We would like to go back to the historical comparisons. You said that the influx of new *pharmaka* can disrubwhole societies. We have briefly touched on the topic of the introduction of writing in ancient Greece, the introduction of gin in England, the introduction of beat music in France. You claim that once again we are seeing the turbulences created by a new *pharmakon*. Your latest book is entitled *The Age of Disruption*.

Stiegler: I think that this is exactly what we are witnessing at the moment, and have been experiencing for the last 15 years. We are all overwhelmed by the sheer quantity of digital *pharmaka*. This is why

the whole planet is intoxicated: men and women, animals, plants, everything. We really have to be absolutely clear about this. We are going through a crisis of mass-intoxication. I am working with poor families in the North of Paris, working-class families, where absolutely everyone is intoxicated with smartphones: the parents, the children, even the babies. The brains of our children are under attack, and this attack is occurring at a mind-boggling pace.

Q.: At the same time older *pharmaka* seem to be losing importance. It is striking to see that "violence" (which could also be viewed as a *pharmakon*) is, at least in most of Europe, not normal anymore. It is very interesting to see that a "bar brawl" or "pub fight" was considered to be an element of normal Sunday afternoon behavior for many centuries, both in Europe and in North America: On Sunday, after holy mass, men would drink and fight at the local pub. This custom was even recognized in penal law and the punishment was very mild, if it existed at all. Beating up or even raping your wife was normal, and even the public torturing of criminals was a common spectacle. Clearly, we are still witnessing much too much violence, maybe even the rise of new forms of violence, but we also seem to be letting go of some of the very harmful older *pharmaka*, don't we? Schivelbusch[9] describes in his cultural history of drugs that for many centuries people in Europe were more or less constantly drunk. So maybe the decline in alcohol consumption, and in the practice of violence and religion have created an opening for the new *pharmaka*? Does this explain the rise of new, digital *pharmaka*, this demand for the replacement of classics like religion, violence and alcohol?

Stiegler: It is always the case that newer *pharmaka* replace older ones. Whether it is a step forward or a step backwards has to be decided on a case-by-case basis. It seems to me, for example, that today's generation of young adults who grew up with social networks are less absorbed by telecommunications technology than their (infantilized) parents. They seem to crave for social relationships, for

9 W. Schivelbusch: Tastes of Paradise.

which — unfortunately — most social media are often only a poor substitute. However, I am skeptical as to whether a downward trend can really be determined in the level of violence. Rather, it seems to me that violence is taking on ever more subtle forms.

Q.: We would also very much like to hear more from you about the combination of different *pharmaka*. In German there is a specific term for mixing multiple drugs: "mixed consumption" ("Mischkonsum") means, for instance, that people use heroin *and* cocaine, they use caffeine to get up in the morning and alcohol to get to sleep at night. Of course, this is maybe more an empirical than a philosophical question, but to us it seemed very important to see that the digital intoxication you talk about often goes hand-in-hand with specific kinds of chemical mass-intoxication. We are thinking not only of the gigantic consumption of sugar, caffeine and alcohol in Western societies, but also of drugs like aspirine, ibuprofene, paracetamol, Prozac, Ritaline, Valium, cannabis etc. The reciprocal effects seem to make digital pharmacology extremely difficult. Gaming and cannabis-consumption often go hand-in-hand, and maté-based soft drinks were popular in the hacker-scene long before they entered student-life. However, we seem to know very little about the way all these *pharmaka* interact. Maybe digital *pharmaka* push people towards anti-depressants, but maybe it is the other way around. As a society we seem rather lost. You already mentioned that you consider the American "war on drugs" to be a disaster. Do you place any hope in the new "techniques of the self" that are gaining importance: Yoga, Meditation, MBSR?

Stiegler: With my partners and friends, and in my collaborative networks, we are working very hard and exactly to gain and distribute new pharmacological knowledge and competence. Of course, digital tools can also be used as a remedy. What makes all of this so difficult is the incredible pace involved. This influx is happening a lot faster than the earlier historical examples you mentioned. This is why, it seems to me, our societies have become destabilized.

Q.: However, it seems to be the case that digital *pharmaka* are not only being mixed with other (analogue) *pharmaka* — with the possible effects of mutual reinforcement or moderation. The same applies to digital *pharmaka* vis-à-vis other digital *pharmaka*. Think for example of different apps on the very same smartphone. Some apps (e.g. Amazon or eBay) want to seduce me into consuming (ever more), others provide me with music, but at the same time present data on my moods, depending on the time of day (e.g. Spotify) etc., while yet others act as an antidote to absorption in consumption: they remind me of my daily meditation exercise, they advise me to go to bed earlier, they help me to identify harmful ingredients in cosmetics, and so on. Does this plurality make something like *consumer sovereignty* possible?

Stiegler: The term "consumer sovereignty" is ill-chosen, because sovereignty is in itself an illusion. I prefer to call this the adoption of one's inevitable heteronomy, and this of course remains a possibility in the digital era. There are choices left to us: It is hard, but not impossible to navigate in the Internet without relying on Google's hegemonic search engine; we don't have to take advantage of Facebook's "single sign-on"-service, etc. We still have at least some discretionary space to decide for ourselves which drugs we want to be affected by and can try to find antidotes to the poisons. What is more, there are genuine examples of new forms of sociality that are made possible by networking media. One might think here of local platforms that help organize neighborly assistance and for instance offer our help (for shopping and other errands of everyday life) to older people in times of corona.

Q: So a lot of things are similar. But still there is something decisively new about digital pharmacology. On the one hand it is just another kind of *pharmakon*, but on the other hand there is something new going on. Could you help us to disentangle this riddle?

Stiegler: The first difference is speed. The influx of alcohol in America took centuries, but now everything is happening incredibly fast. You have to imagine what "digitalization" means, not only in Eu-

rope, but in Latin America, Africa etc. Within a few years our world has completely changed. Millions of smartphones have been produced, as well as tablets and other gadgets. And this process seems to be accelerating. A new technology or app can be outdated within months. Human beings have to have time in order to understand new *pharmaka*, but no sooner have we partly understood one kind of addictive app than there is already the next on the market: Facebook, Twitter, Instagram, TikTok, it never ends. So in my view the speed of influx is an important factor, since it makes it a lot more difficult to practice adoption. Speed pushes us towards adaptation. Adoption takes time.

The second difference is the degree of automation,[10] which has increased immensely. Nowadays not only our practical knowledge, our *savoir-faire*, is being made superfluous by the mechanization of production, as in Fordism; even our theoretical skills and our capacity to form a will and make decisions are "aided" by so called "artificial intelligence" (which is, in fact, artificial stupidity).

Q.: A concrete example would be helpful in understanding this. Are you referring here to the mechanism of "parsing", which means that every human input into an algorithm has to be "translated" into another format so that it can be processed further? — Facebook, to give only one prominent example, has "solved" the problem of parsing by short-circuiting the input-giver. Whenever you begin to type in a word in order to characterize yourself, your text is then completed by a pre-given list of possible answers. You cannot escape the virtual logic of the drop-down menu. Thus the design of the human-machine interface determines the data entry process, so that the user cannot but fulfill the task of assigning their details to a semantic category registered on the server side.[11]

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10 On this see Stiegler, Bernard: Automatic Society, Volume I. The Future of Work, Cambridge et al.: Polity 2016.

11 This example is taken from Mühlhoff, Rainer: "Big Data Is Watching You. Digitale Entmündigung am Beispiel von Facebook und Google", in: Rainer Mühlhoff/Anja Breljak/Jan Slaby (Eds.), Affekt Macht Netz. Auf dem Weg

Stiegler: This is a very illuminating example of the way in which digital technologies intervene in our perceptions of opportunities, and hence influence our decision-making processes. Selections are taken over by prefabricated options that are tailored through "user profiling" and "auto-completion" technologies. This form of assistance can be of great help, of course. Think of "Google Translate", for example, which I use a lot, because I cannot speak Chinese. It enables me to communicate with people I could otherwise not address; but to the effect that the nuances of speech are flattened out and that my message is depersonalized. A third difference comes into play here. There is a theory tacitly inherent in the use of computers and smartphones: the idea that everything can be solved by calculation. And this, of course, is absolutely wrong. Nothing can be solved by calculation. You always need a decision that is not calculable. Derrida has written about this at great length: the really important things like hospitality, love, forgiveness, politics, etc., have a blind spot. If you can explain your love by calculation, it is not love.

Q.: This was almost a *leitmotif* in his later writings. Only an "impossible", i.e. incalculable, unlegitimizable friendship is friendship. In this sense a "Facebook-friend", to Derrida, is not a friend. Friends never exist in the form of a given, but only as a possibility that can be addressed in the vocative. In this regard Montaigne's phrase "Oh my friends, there are no friends!" suddenly makes sense…

Stiegler: Indeed, Facebook epitomizes an industrialization of friendship on an unprecedented scale. It is made possible by the digital grammatization of our social relationships, which reconfigures these by virtue of algorithmic calculations. The "making" of friends on Facebook is largely "out-sourced" to a technical function through which everyone in my address book automatically gets an invitation to become my friend. I would argue that as a result of this kind of automation, our social relationships are at risk of being proletarianized, i.e. mentally impoverished, and that the real exchange of ideas,

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zu einer Sozialtheorie der Digitalen Gesellschaft, Bielefeld: transcript 2019, pp. 81–107.

recognition and disclosure, which Aristotle linked with friendship, or *philia*, is prevented.[12] And since friendship is the basis of larger social entities called community, I would go so far as to claim that the so called "social networks" can be very harmful to our social connections.

The underlying process can be coined "digital grammatization", i.e. the process of analyzing and formalizing human behavior into a code that can be digitally processed. For example, the Facebook user is stripped of his personality, he is disindividuated, by being broken down by the algorithm into a series of data which he — in part on a voluntary basis, but to a growing extent involuntarily — discloses by navigating through the Facebook sites, by liking and disliking and showing his interest/disinterest etc. It is on the basis of these data that social networks form connections, make suggestions and thus determine the rules of our communalization, or transindividuation, as I prefer to out it with recourse to Simondon.

Q.: That sounds as if you were assuming a technological determinism according to which social organization is determined by the technical organs. But isn't digital grammatization also pharmacological in the sense you explained above? In your book "Taking Care of Youth and the Generations" you convincingly show the pharmacological character of the leap in (pre-digital) grammatization that occurred as a result of the invention of the printing press, followed by the Reformation, the Counter-Reformation and finally the Enlightenment (whose passionate striving toward registration and categorization is beautifully exemplified by Diderot's project of the *Encyclopédie*). All these events brought about not only an increased normalization and standardization (of language use and behavior as a whole), which made the individual the subject of state control, but also created the public sphere as a "critical space".[13] Do you also see positive aspects associated with the digital grammatization

12 For a deeper elaboration on this see Stiegler, Bernard: "Five Hundred Million Friends: The Pharmacology of Friendship", in: UMBR(a): Technology 17 (2012), pp. 59–75.

13 See B. Stiegler: Taking Care of Youth and the Generations, p. 138ff.

brought about by social media platforms? Can we use the existing tools for social networking in a non-proletarianizing or subversive way, based on "algorithmic literacy", i.e. a critical knowledge of the mechanisms that are at work? Or do we need alternative digital technologies — hardware or software — in order to counter the anti-social effect of current "social media"?

Stiegler: Of course, I do see the chance for a renewal of social life on the basis of the unprecedented formalization of social relations due to digital grammatization, and the social networks could well add to this development. The enthusiasm of young people for social networks is an indication of the longing for social relationships in an anomic world, and I am convinced that something good can be created from this. There is no denying the fact that Facebook is a largely a marketing tool which has newly defined the terms for personalized targeting. However, Facebook does not necessarily corrupt its users. For example, the self-profiling demanded by Facebook can strengthen your reflective powers, instigating a practice of auto-ethnography which might generate a heightened awareness of the conditions and the importance of social bonding. Knowledge of what you are doing (and of what is done to you) when you navigate on Facebook is absolutely important. We need to arrive at an understanding of these networks both on the social and technological level. I don't like the term "algorithmic literacy", because it sounds like standardized knowledge, like a prefabricated competence. But you are right that a minimum level of understanding of the technical mechanisms underlying social networking is helpful.

Q.: So again, it is not technology *per se* that is dangerous…

Stiegler: Well, we have to see that the ideology of calculation and the digital *pharmaka* go hand-in-hand with a neoliberal mindset. I say this explicitly, because it is extremely important to understand that Silicon Valley is the last stage of what I call ultra-liberalism. The rise of neoliberalism goes back a long time. When it entered the political stage with Thatcher and Reagan in the 1980s, all the theory was there already, in particular Hayek. And Hayek said: everything is calcula-

ble. Gary S. Becker even applied the model of the *homo oeconomicus* to the mother-and-child-relationship.[14] This was the reason for him to think that neoliberalism was better than any other kind of political economy. And this is the reason why he said we don't need any government, we don't need any state, we need only to the market decide everything. Silicon Valley is based on such a kind of libertarianism and the most developed discourse on that is transhumanism. As you know, the transhumanists intend to replace mankind by machines which are stronger than any human being.

Q: Do you think this is a real danger? From a continental European point of view it sounds just like science-fiction-madness…

Stiegler: What is dangerous is the mindset. You can address a medical question, for instance, only through judgment, i.e. the diagnosis by a doctor or a collective of doctors. You need a "faculty of judgement", an "Urteilskraft" in Kant's terminology, not just calculation. The corona-crisis could not have been anticipated based on data from the past. It takes more than just calculation to make intelligent decisions…

Q.: Would it be appropriate to use Kant's distinction between *reasonable* (*"vernünftig", Vernunft*) and *rational (*"*verständig", Verstand*) in order to describe what is missing in pure calculation?

Stiegler: That is indeed a very valuable distinction, but one which is nowadays almost forgotten. In the wake of the Industrial Revolution, the spiritual, or *noëtic* dimension of intellectual life was almost absorbed by the ratio, or the computational faculty of the mind. Reason is for Kant, first and foremost, the faculty of envisaging ends, or what I prefer to call critical protentions. Reason is entrusted with the question of what goals are valuable, and how I can achieve those goals without preventing others from pursuing theirs — in short: how I ought to live. In a society determined

14 Becker, Gary S.: A Treatise on the Family, Cambridge, MA: Harvard University Press, 1981, Enlarged ed., 1991.

by consumption, these questions no longer arise; the satisfaction of needs is short-circuited by the permanent presentation of objects that seem desirable through marketing. This is why Adorno and Horkheimer called consumer capitalism a new form of "barbarism" — and rightly so. However, with the advent of computational capitalism, things have gone even further. Operations of understanding, which are now mimicked and taken over by machines and algorithms, are exosomatized and thus in a literal sense split off from the synthetic functions of reason. This amounts to a state that I call generalized madness, which means that an immense process of disinhibition takes place. And this is characteristic of contemporary capitalist societies.[15]

Q.: The connection you draw between the rise of capitalism and the process of disinhibition is not yet completely clear to us. In his groundbreaking work on the "civilizing process" Norbert Elias seems to claim quite the opposite: that modernity is characterized by the development of inhibition, or affect control, which he characterizes as the "dampening of spontaneous flashes (and) restraint of affects"[16]. Affect control is traced back by Elias to the sociogenetic process of social differentiation, which begins with the emergence of the territorial state and the abolition of feudal structures, but is then further promoted by the development of capitalism. From a completely different angle, Foucault also seems to suggest a connection between the disciplining of society, which is evident in the criminalization of deviance and supported by institutions like school and prison, and the development of modernity, of which capitalism is an important aspect. Against this backdrop, could you specify what you mean by "disinhibition"?

Stiegler: I do not find anthropological conceptions particularly helpful that distinguish, in a scholastic vein, between ratio and affect.

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15 On this see B. Stiegler: The Age of Disruption.

16 Elias, Norbert: The Civilizing Process, Volume.I. The History of Manners, Oxford: Blackwell, 1969; Elias, Norbert: The Civilizing Process, Volume II. State Formation and Civilization, Oxford: Blackwell, 1982.

Such dichotomies are too abstract, and fail to grasp the interconnectedness between the three levels of organs which I outlined at the beginning of our interview. I prefer the term *libido*, inherited from psychoanalysis, or the conception of libidinal economy, by which I understand the way in which we take (or do not take) care of objects. In principle, two tendencies of libidinal economy can be distinguished, one based on short circuits, dominated by mere drives which aim to consume their object; and the other, based on long-circuits, brought about by a sublimation of drives which opens up room for attention, the formation of will and finally results in care for their objects.[17] Against this background it can been seen that the systematic short-circuiting of our libido by psychopower, which I call disinhibition, leads to a corruption of the will and splits off the analytic functions of understanding from reason, or a practice of care. Disinhibition in this sense does not mean that actions will be guided by mere "affect", that is, will be devoid of any calculation or instrumental rationality — quite the contrary: Jean-Baptiste Fressoz aptly refers to modernity as a process of "reflexive disinhibition".[18]

A school of pharmacology

Q.: One possible starting point to change the prevailing mindset would be the school system. Foucault was fundamentally skeptical about school because he sees it primarily as a "disciplining dispositive". Although he never made an explicit analysis of educational institutions, in the course of his historical reconstruction of the emergence of modern institutions like hospital and prison, school as well is in the focus of attention as one modern institution through which the conditions, attitudes, and behaviors of its subjects are formed. These have less to do with the content of teaching than with the type

17 This theory is outlined in B. Stiegler: What Makes Life Worth Living, p. 24f.

18 Fressoz, Jean-Baptiste: L'apocalypse jouyeuse. Une histoire du risque technologique, Paris: Le Seuil 2012, p. 160.

or the form of teaching. You seem to be more optimistic that school may have an educating function in the humanist sense.

Stiegler: Foucault is right to stress that school is about training, or rather, instilling discipline, although this is just one effect. A further point is that school takes care of the "transindividuation of knowledge", an important part of which is the passing on of knowledge from one generation to the next. It constitutes in itself, through this very function, a system of care.

Q.: In the aftermath of the PISA-study, beginning in the year 2000 the European school systems started to undero a change, from "input-orientation" to "output-orientation". The curriculum is no longer defined by the knowledge to be imparted, but rather by skills that the students are intended to acquire. What do you think about this paradigm-change?

Stiegler: I think that knowledge is extremely important. But, in a way, we have to re-invent what knowledge is. Because today we are not producing knowledge. As you said, we are producing skills. We are producing competence. But for me knowledge is not at all skill and competence. Knowledge is the capacity to produce singularity in a singular situation, i.e. to produce a purely single answer. A skill is not at all singular. It is always standardized. And this is the effect of industrialization, and now we have to enter into a new form of industry: let's call it the industry of post-intoxication. Children have to learn how to overcome the stage of intoxication, "intoxication" being understood here, of course, not only as that of alcoholics and other drug addicts. So there is a new political economy being erected on the basis of this intoxication.

Q: You do not only reflect theoretically about questions regarding the design of the educational system. You were a member of the "Agence nationale de la recherche" for a while. In 2008 you were asked by Vincent Peillon, at the time Minister of Education in France, to lead a group on the introduction of digital technology

into school. What were your plans? And why did you eventually resign?

Stiegler: In 2008 the approach was wrong. It was dominated by Microsoft and the general understanding of the computer as a "computing machine". However, I am still working on establishing an alternative digital culture. In the suburbs north of Paris[19] we are using two big tools or programs, softwares and databases. The first one is an information-modeling technology for the building and construction sector. It is completely transforming urban development, urban programming, planning etc., thereby making a new structure possible for cities. And we use this video game called Minecraft, albeit as a free software version ("Minetest"). I am now launching a campaign in France to completely change the character of national education. For me, national education should become a laboratory at all levels: from kindergarten to high schools and universities the understanding of a computer must be changed completely.

Q.: One seems to find traces of a positive digital pharmacology here…

Stiegler: The Internet has great potential, the most remarkable of which is that it breaks up the opposition between consumption and production. The problem is not the internet itself, but its embeddedness within computational capitalism. However, there are collaborative technologies, and a kind of a struggle for free software, a growing community subscribing to the principle of "open source" and "creative commons" — these are practices which are not covered by the logic of algorithmic governmentality, and which foreshadow a *practice of care*.

19 For more information on the Stiegler project "Pleine Commune", see PROJET D'EXPÉRIMENTATION TERRITORIALE PLAINE COMMUNE TERRITOIRE APPRENANT CONTRIBUTIF (http://francestrategie1727.fr/wp-content/uploads/2016/02/projet-plaine-commune-10.03-bernard-stiegler.pdf).

Q: You described pharmacology as a "savoir-faire". It's a kind of art or craft; on the one hand it is an individual, a self-educational project, if you like — you have to know what is good for you in a way. The stoicism Foucault worked on was in a way an individualistic movement. On the other hand, pharmacology is a political challenge. It's also something that we have to decide on together. Even if prohibition wasn't very successful and even if the war on drugs is a disaster — still it is something we somehow do together. We don't know if you would agree with this difference between, if you like, a liberal or even neoliberal pharmacology, and what may sound almost like a French Republican idea of democratic *collective* self-determination.

Stiegler: Well, I agree that digital pharmacology is not a realistic individual project. However, I am not sure that the national level is the right level and that the French Republic is a good model for implementing helpful collective decisions. In my experience there are other helpful models that operate more on the basic level of community work. In our work in the north of Paris we are trying to learn from the experience of people like Gregory Bateson. We use the concept of the Alcoholics Anonymous as they were studied by him. Bateson showed very clearly that if an alcoholic wants to stop drinking, the best way is to help another alcoholic to stop drinking. The bad experience, the tragic experience of alcoholism is the destruction of self-esteem. But this experience can give you the competence which allows you to help others. Suddenly you transform the experience into knowledge from which you can benefit. The efficiency of this association is four times better than the efficiency today, for example, of hospitals. I recall this example, because I consider the question of new forms of knowledge to be something which has to play out on the level of localities. I don't believe in top-down pharmacology, but in people helping themselves. So, I think here the question is to re-invent and re-establish a proper idea of "knowledge". Intelligent machines can make their users more stupid and we have to cope with the fact that we are producing a new proletariat.

Q: This is a very important observation for which there is even some support from a few empirical studies on France. One could hope that machines would do the stupid work for us, and that humans would do the intelligent work, coding machines etc., but this seems not to be the case. In fact, very few people actually code and a lot of people are told by algorithms where to deliver the parcels. Richard Sennett has worked a lot on the decline of craftsmanship. In this regard it seems that by your account digital pharmacology is almost a game-changer. It is so toxic that the positive use of digital tools depends on the re-inventing of the computer, you claim. And you outlined the political circumstances under which re-invention and re-contextualizing might be possible, but this seems to have almost utopian character. What makes you think that in the end we will really survive the onslaught of digital *pharmaka*?

Stiegler: Failure is simply not an option. We have already talked about *pharmaka* as soft power. The United States and China are dominating the production of digital *pharmaka*. If we don't manage to answer this challenge, European companies might disappear. Even Mercedes or Volkswagen can disappear. Everything can be destroyed by China and America, if we don't manage to defend a European way of life. I think that this European singularity can be described as a culture of hyper-retention: a culture of books, both in the Greek and in the Jewish tradition. This culture of textuality is different from the Chinese tradition of writing. I hope and believe that we can preserve this. The reason for which I believe that it is possible is because it is reasonable. The way in which Silicon Valley is developing everything is rational, but completely unreasonable. And this produced Donald Trump. And it is not only me who says so. They are saying that today in Silicon Valley itself. So in order to establish and develop a European digital pharmacology we should stop emulating American or Chinese models. We therefore have to re-evaluate locality, and this is a question of what I call a new political economy.

Q.: In this example too, as in the case of the Bible, the term *pharmakon* also seems to describe a weapon. You can not only intoxi-

cate yourself, but also others. And if we are understanding you correctly, you're saying that organizing our *pharmaka* together is also a way of keeping our weapons polished, as it were, and ourselves prepared for self-defense. *Pharmak*on as a weapon; there is this term: "weapons of mass-distraction".

Stiegler: Oh yes, of course. America's strength in the 20th century was not at all the GIs. The GIs lost in Vietnam. The strength of America was Mickey Mouse, Hollywood and art. But you see, the wounds we have can also be a starting point of a healing. This is an old romantic idea, of course, but you can also imagine it in a more practical sense. Django Reinhardt, the French gypsy musician, lost two fingers, and after the accident he became the famous musician that we will never forget. Before this traumatic event he was already an excellent musician, but after the accident he became a genius. I think it is extremely important to understand that the accidents, the toxicities, the diseases, our wounds, can also be sources of invention, creativity, maybe even of the most brilliant ideas. So, from all the intoxication, all the misuse of *pharmaka*, we may also learn – and progress and practice pharmacology together.