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Behaving, Mattering, and Habits Called Aesthetics

Part 1: Theoretical Navigation

Abstract

In this two-part article, I propose a new materialist understanding of behavior. The term "mattering" in the title refers to sense-making behavior that matters, that is, to significant habits and materialized behaviors. By significant habits I mean protocols, practices and routines that generate ways of reading material signs and fixed accounts of movement. I advance a notion of behaving that stresses its materiality and sensory shaping, and I provide select examples from music. I note that current definitions of behavior do not capture its material dimension. This is because behavioral science has mostly viewed matter as passive, and not as an active agency. Such an approach has metaphysically framed behavior as a phenomenon of presence that is external from its environment. The approach of behavioral science to matter where there are fixed borders between the internal and external is lacking, since it does not account for agential cuts as conceptualized by Karen Barad. Instead, I consider behavior performatively; as an ongoing iterative practice and as integral to the growth of immanently self-caused matter that spawns metastable relational formations that produce different possibilities for successive formations. In this regard, behavior matters, and matter behaves. One key aspect of my article advances Bernard Stiegler as a critical new materialist thinker. This advancement concerns the technical doings of artworks, which include the material activity that is generative of sensitivity: feelings and beliefs associated with a sense or meaning. I outline an example of the materiality of habits as constitutive of music. After that, I coin the transformative doings of matter on the artist as a "caripulation," which is a desired movement or motion that transforms the mover and the moved. Finally, I raise "pharmacological" considerations in terms of the Stieglerian aspects of organic and inorganic organized matter.

Keywords

Behavior, New Materialism, Art, Aesthetics, Behavioral Aesthetics, Habits, Music

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Introduction

In this article, I propose that it is worth paying attention to the materiality of behaviors and feeling[1]—to how behavioral aesthetics comes to matter within new materialist explorations of art/techne [τέχνη]—by developing new theoretical and exploratory thinking. The article's structure arises from my readings of Bernard Stiegler's philosophy, which I aim to develop *with* my text's authorial agency. I experiment with a methodological mode of rhizomic writing (Hillier 2007, 16-17; Chloe Humphreys 2013), which performatively acknowledges and respects a kind of "alien" thinking (Miguens 2015; 2020).[2] After all, noetically active texts (like when we say a substance

[1] Aesthetics understood broadly as αἴσθησῐς. In Cognitive Behavioral Therapy, the general premise is that behaviors and theoretical mental/physiological terms, such as thoughts, feelings, and emotions, are all mutually interconnected and influence each other in time. The ability to identify a behavior and any other associated terms, i.e. joy, sadness, *Weltschmerz* (literally world-pain, a term coined by the German author Jean Paul) etc., is a technical (linguistic) ability to bring to conscious awareness and direct attention at some quality that is judged by the faculties of cognition and understanding as well as phenomenologically retained and projected via memory and anticipation. For emotions as behavioral complexes see: Bradley and Lang 2000. For a dictionary of invented emotions see: "The Dictionary of Obscure Sorrows" n.d.

[2] That is "alien" to established scholarly intellectual homogenizations of thought (writing) or Western Anglo-Saxon managerial standards that penetrate foreign traditions within the political and formal grammatizations of records and texts. I am verbalizing this in order to acknowledge the concerns of my reviewers, to whom I wish to extend my thanks and appreciation. I have decided to compromise and significantly revise this submission, so that this text is intelligible for the Anglo-Saxon academic culture (given the fact that it is written in English, a language whose grammatical structure is already analytical). Most of their suggestions for structuring the text fit Western "academese" criteria of communication practices. I received my academic training in Poland. So, despite the fact that I am an English native speaker, the writing style presented here is individuated and diachronic, a part of Teutonic (impressionistic, relativistic, interpretive, postmodern, digressive) thinking, writing, and practicing philosophy and communication. In the Anglo-Saxon perspective, writing is seen above all as a means of doing things through texts, i.e. interacting with people. From the Teutonic vantage point, writing becomes primarily a form of being through texts. It is likely, therefore, that problems will arise when Polish speakers are asked to perform a skill-dominated writing task, whether in their native tongue or in English. […] The Teutonic approach to writing and teaching writing is described sometimes as focusing on content and showing some disregard for form […]" (Duszak 1998, 196). So, I value academic noetic diversity, which is why I prefer to contribute in this way, as a means of individuating within the global tendency towards a uniformization of the culturally embedded intellect or Aristotelean *nous*. Besides, as Stiegler claims throughout his philosophy, reading should be *laborious*, since writing that

is biologically active) ultimately energize truth-seeking behaviors that are idiosyncratic movements of producing *différance* and curiously synchronizing extra-ordinary[3] understanding.

I expect that each re-reading of this two-part article will stimulate novel critiques and productive misunderstandings. This is crucial given their necessity and value in terms of the Stieglerian "error," "lack," or "default" [*défaut*] in noetic genesis, producing human and even extra-human knowledge or at least that which is in ex-cess of the human (referring to the incalculability of life) (Stiegler 1998a). For Stiegler, knowledge is by definition infinite, although it is limited by its "retentional finitude:" the technical horizons, limitations, or boundaries of memory and forgetting (Stiegler 1998b). So, I omit certain discourses[4] from this text's foreground, which is this article's *default* that is necessary [*le défaut qu'il faut*] and which should not be resolved here.

I do not intend to develop a central narrative against which each section is fixed nor a "final" line of argumentation that can be established once and for all. This work [*œuvre*][5] is open and performative, it is care-fully[6] and

individuates the singular difference of the diachronic "I" with a synchronic "We" qualifies as a pharmacological stimulate, for instance, encouraging the growth of the hippocampus in the brain. Thus, the aimed social role of this text is to train and elevate the value of the spirit/mind [*esprit*] or attention and being.

[3] Here, extra-ordinary means an elevation of the ordinary or the "[…] everydayness that creativity always transfigures into something improbable, that is, into something singular […]" (Stiegler 2010, 12).

[4] These could include science and technology studies (Bruno Latour), object orientated ontology (negative new materialism), or vital new materialism. See: Gamble, Hanan, and Nail 2019.

[5] Here, the use of square brackets denotes a reference to a foreign word which can be translated in many ways. This term is important in Stiegler's philosophy. In this case, the French word *œuvre* means not only work (labor) or artwork, but also an opening, operation, and activity.

[6] This term refers to the Stieglerian notion of care as thinking about attention so as to cultivate it. This is a temporary noetic practice of interrupted thinking done from time to time (Collins 2014, 219). Stiegler (2017a) conceptualizes thinking as care, which is exemplified by the wordplay between *penser* (to think, to imagine, to believe) and *panser* (to treat, to care, to bandage). Etymologically speaking, *panser* is a doublet of *penser* since both terms derive from the Latin *pensare*. The meaning of *panser* as "to take care, to heal, to concern oneself with" comes from *penser à* (thinking about, considering), and *penser de* (thinking of, having an opinion). This doublet should be viewed considering the original meaning of the term *ethos*, especially since *ethos* was understood as an accustomed place or a habitat of horses. *Panser* had meant to give (a horse) proper grooming or attention, to treat it well. Its virtue is in attempting to help both *feel* better; to care about and care for

artificially designed to be noetically active, which is the inadequacy of not reaching its "end," an end that—metaphorically speaking—would be its death. The questioning, however, that I do intend to develop concerns itself with how the field of behavioral aesthetics makes intelligible the sensory mattering of procedural, habitual learning that constitutes every *work* of art (what I call making-sense). By habitual I refer to the Aristotelian *hexis* [ἕξις] and *ethos* [ἔθος] (Holmes 2018, 64-96).[7] In *Nicomachean Ethics* (1105b), the feelings that accompany pleasure or pain, or the *páthē* [πάθη] that motivates and moves the soul (what I understand as the *esprit*), are defined in relation to the *hexis* which determines the direction or end of the experienced feelings as well as their intensity or quality. The Stoics later developed this term as a material binding power or what Seneca called the *unitas*. It was grouped along with *physis*, *psyche*, and *nous*. *Hexis* is the "*unitas* of inorganic matter" (Peters 1967, 83-84; Preus 2007, 290). Thus, the mattering of *habit* and its technical importance for behavior are worth exploring.

relationships. It ties the notion of looking after or being tender, nursing, and soothing, to what we call thinking, or any other activity of the mind. It should be noted that thinking is commonly viewed as a behavior, something an organism does. (Melser 2004) I believe this holds profound implications for philosophy in terms of attaching oneself to knowledge, as loving all kinds of thought, especially *savoir-vivre*, and for providing nourishment or *food for thought*. If the intellect (*nous*) is stimulated, if it receives proper treats or what is called positive reinforcement within its milieu or habitat, it grows. Careful thinking as *penser/panser* in terms of Cartesian *cogito ergo sum* is thus about attentive existential housekeeping; it is about practicing hygiene [ὑγιεινή τέχνη, hygieinē technē or the art of health]. In other words, *penser/panser* is communicative behavior, which is sound, wholesome or salutary, and necessarily implies the intimate, the domestic and the social.

[7] The latter, *ethos*, emerges out of the former, *hexis*, which is an active having, not an action. *Hexis*, non-mechanistic procedural and repetitive embodied "habits" or a semi-permanent "second nature" (between "nature" and "culture" in Aristotle's *On Memory and Recollection*), needs to be cultivated in order to command any *technai* and shape thought itself. See the section titled *Ethos and Hexis* as Rhetorical Habituation for detailed analysis of the relation between these two terms in the second chapter of Holmes' book. There, we learn that daily habit, *hexis* (a state, characteristic, disposition or bodily comportment), derives from *echein* (to have/possess) and is understood as a trained or learned *active having* that proceeds *activity* and produces ethical action, action that is not impulsive nor necessarily completed, which can be suspended. *Hexis* is not always a repetition of a specific behavior in the presence of its stimuli, since it entails its inhibition and common sense. The general conclusion is that habits produce creativity, and not what is conventionally assumed, that they are obstacles to creative thinking, which would be to misunderstand the importance of procedural, repetitive, bodily actions that give shape to thinking, which in turn steer behavior, that is ethos as character formation or habituation, which is responsible for *excellence*, an aesthetic category used for judgement, a "practice" of cultivating a "second nature" or perhaps an artificial instinct.

This article has organized itself into an introductory section that is followed by a critical inquiry of the term behavior. Behavior is in *default*, and so the popular notion of this term is lacking and necessarily inadequate,[8] which is the *default* of the formal acknowledgement of the activity of matter. The subsequent sections are like cays: small, low-elevation, sandy islands that share common ground with these problematics, while surrounding waters of the unknown (unobserved and unmeasured) conceal this. We may cross waters with bridges (structures of argumentation to follow) or by using individuated rafts and ships, so the "correct" navigation (argumentation) from one island to the next does not need to be linear, that is, follow grammatized bridges or traces of noetic movement presented in this paper. The range of topics, the proposed map of beaches, includes the general habits of music-making, the Stieglerian notion of pharmacology, and theoretically flirts with select notions developed by Martin Heidegger and Maurice Merleau-Ponty.

When it comes to the specific theoretical location or situatedness of this article, the milieus in and for which the arguments of the piece are first and foremost put forward are located in art and music philosophy, more general philosophy concerning embodiment, cognition, and behavior[9] (Ayoko and

[8] Behavior, and its material failures and resistances, for me is understood phenomenologically in relation with tertiary retention, as nudge theory and its politics should make obvious (Thaler and Sunstein 2009; Raihani 2013; Ariely 2009; Kahneman 2012). As Stiegler writes: „When adequation is effective, interruption no longer occurs, although adequation is nothing more than a default: '*I think*' can no longer accompany this representation, which itself cannot present itself; flux has ended. The individual thus bequeaths this 'completed inadequation,' so to speak, to his or her posterity, in the form of tertiary retentions: a pipe, a bit of garden, love letters, tools, a butterfly or linen collection, a library (even a library of books he or she has written), a cat, photos, a cemetery plot. Anything is possible, even the unmarked grave and the public trash dump" (Stiegler 2011a, 58).

[9] Milla Tiainen has brought to my attention that the focus on the constantly iterative and open-ended habits constitutive of behaviors of musical creation could be developed by some of the approaches charted in Nicholas Cook's book *Beyond the Score: Music as Performance* (2013) i.e. the notion of "corporal (sic) thinking." Inspired mainly by Deleuze and Guattari and some related philosophies, Tiainen also has written about the ever-dynamic nature of even the most entrenched habits of music-making, and about the undoing of habits through embodied potentiality reignited by imagination, in her PhD dissertation, *Becoming-Singer*, which was based on ethnographic and philosophical research with classical singers. Unfortunately, her dissertation is not easily available. Although, interested readers may refer to her other writings on the same topic that are in circulation—for example to Tiainen 2008 in the book, *Sonic Interventions*, or to Moisala, Leppänen, Tiainen & Väätäinen 2014 in the journal, *Current Musicology*. However, I do not have the

Ashkanasy 2020; Kilbourne, Dorsch, and Thyroff 2018; Stienstra et al. 2012), and more specifically the philosophical practice of producing knowledge as perused by Ars Industrialis (Stiegler 2014b, 11-28).

The problematics of behavior are explored initially from an etymological and definitional analysis of the term. I note that the term "behavior" is ambiguous, and definitions—from non-specialist dictionaries like Merriam Webster to the philosophical accounts presented by philosopher Filipe Lazzeri—tend to overlook the materiality of behavior. These definitions conceive of behavior immaterially as a quantifiable and copiable style or pattern, cause or reason, function or operation, an organized movement, and finally, as a difference. All these aspects are positioned as external to matter and to its milieu or environment. The motives presented in this paper follow the thinking formulated by Stiegler in the series, *Technics and Time* (Stiegler 1998a; 1998b; 2011a), where the philosopher claims that the question of who (*esprit* or spirit/mind) or what (matter) invents the human, an entity which necessarily lacks an essential nature, is one that is undecidable.

My thinking of behavior is orientated by reflections on technics, as a necessary contribution supplementing the *default* in the thinking of people associated with new materialisms[10] (Gamble, Hanan, and Nail 2019), as proposed by Charles Devellennes and Benoît Dillet, and Michał Krzykawski (Devellennes and Dillet 2018; Krzykawski 2019). The former two advance the plurality of new materialisms as a strength and pluralize the discipline furthermore by centering technics within its discourses (Devellennes and Dillet 2018, 9). In other words, they view Stiegler as a philosopher who advances the "unthought" by "taking the pharmacological nature of technics seriously, that is, treating it both as a potential cure and as a potential poison" (Devellennes and Dillet 2018, 18). They argue that such a "pharmacological" analysis "is a productive way to move the debate forward for new materialisms" (Devellennes and Dillet 2018, 18). Moreover, Krzykawski adds that Stiegler is a thinker of what is called hyper-matter (digital information), an energy and information complex where matter can no longer be distinguished from form (Stiegler, Petit, and Bontems 2008, 109-110). Fol-

space to develop this approach in this article, which is aimed at understanding the technology (Krzykawski 2019, 86) of behavior as Skinner problematized it, that is the "technology of behavior" (Skinner 2002). Stiegler understands bodily existence as exorganic and endorganic (Stiegler 2020a).

[10] A discipline of various heterogenetic paradigms and theories. A better way of speaking would be to say new materialisms in the plural (Coole and Frost 2010; Sanzo 2018; Devellennes and Dillet 2018).

lowing the thought of Chinese philosopher Yuk Hui, who notes a contemporary technological shift from the "organized inorganic" to the "organizing inorganic" that repositions machines and other technical systems as not mere instruments but "gigantic organisms in which we live" (Hui 2019, 28), Krzykawski argues that "new materialist thinkers seem to overlook this shift […]" in the hyper-material (Krzykawski 2019, 82). That is the shift from the passive "organized" to the progressive "organizing" aspects of matter, which for me raise behavioral questions. If organizing inorganic matter is conceived of in terms of gigantic organisms or Stieglerian "simple, complex and hyper-complex exorganisms" (Stiegler 2020), then their negentropic behaviors and habitats must also be studied. In addition, Krzykawski emphasizes that positioning Stiegler within the discourses of new materialisms would be philosophically promising, since "[…] revolutionary hyper-materialist thinking goes beyond what new materialist scholarship often refers to 'nature-culture(s)' and focuses on the vital link between technology and biology in order to better explain the technological condition of noetic life and offer a wider account of what is called thinking" (Krzykawski 2019, 88).

Moreover, as Devenelles and Dillet do, and as I do here, "By engaging with the work of Stiegler in this introduction, […] we also aim to put this technological question at the forefront of new materialist agendas, something that remains a lacuna of much of the literature" (Devellennes and Dillet 2018, 9). They defend the claim that Stiegler is a new materialist thinker who derives his thinking from Derrida, not Latour (Devellennes and Dillet 2018, 15), and who provides the advantage of placing technics at the forefront of new materialist attention. Krzykawski approaches technics broadly in his critique, where he argues that "technics (*tekhnē*) designates all domains of what is referred to as *savoir* in French and what cannot be reduced either to 'skills' or 'knowledge.' Therefore, as Stiegler suggests, politeness, elegance, rhetoric, philosophy, poetry, dancing, as well as cooking, can be defined as technics, that is particular forms of performed *savoir* or *savoirs* […]". These knowledges, noetic activations, take place through thoughtful or careful practicing of a material "caripulation."[11] He adds, " 'All human action has something to do with *tekhnē*,' which means that 'delimiting the field of technics' is difficult (Stiegler 1998, 94)" (Krzykawski 2019, 86). Thus, there is a proper domain of *savoirs* that address the questions of behavior. So, I think of behavior as an ensemble of materially habituated techniques that are productive of sensibility and sensory formation, and in effect, produce diverse aesthetics.

[11] I define this term later in this paper.

Part I. Theoretical Navigation

Background context on the materiality of behavior

What ways of questioning, then, can be posed about the material relationship between behavior and the sensible (who/what makes sense—understood as the agency of producing sense perceptions and intellectual or symbolic meaning)? Sensibility is assumed to stem from organologically sculpting modes of perception and sensitivity[12] that grow with material media. (Stiegler 2011b; 2014; 2015; 2017b; 2017c; Dillet 2017) If phenomenology, like the *Structure of Behavior* by Merleau-Ponty, is to be today theoretically refocused on behavior, rather than on consciousness, then how can retention be developed?

I am interested in the intersection between being and having. In this article the questioning and proposal of paying attention to the materiality of behavior stem from studies that address the philosophical question of the general origin of behavior (and life) itself (Brennan and Lo 2011; Larson, Jensen, and Lehman 2012). Examples include behavioral chemistry—molecular-level behavior and the problem of "free will" in terms of the "decisions" of the "Self" of molecules, proteins, RNA, and so on—or the contemporary understanding of complex behaviors as recurrent processes of behavioral trait selection that have repeatedly emerged in biology (York and Fernald 2017). From a macro-scale perspective and in response to these sources, I noticed that behavior trait selection is also a question of co-selection by the properties and behaviors of material, technical sensory objects called inorganic organizing matter constitutive of tools coupled with refined anthropic gestures, for example writing, grammaticized and ordered

[12] Stiegler pursues this question by referring to the notion of the social sculpture as practiced by German artist Joseph Beuys (Fitzpatrick 2014). Organology is understood as a tripartite transductive relationship between human sense organs, technological artefacts, and social organizations. What is problematic is how to situate behavior in this tripartite relationship. It certainly cannot be reduced to physiology nor to instrumentality, so to only one term of this triple relation. I think that this was precisely the aim of what Rosetta Brooks, and other artists like Stephen Willits, has called *Behavioral Art* in the periodical *Modern Art Studio International* volume 185 issue 951 in the early 1970s. It was supposed to produce changes in how a given social class understands Others as well as in "sculpting" how they behave through means of cybernetic control. (Willats 2010). This would later develop into the notion of *performance*, which will become contested by Tania Bruguera in the 2000s through the foundation and closure of the *Catedra de Arte Conducta* (Behavior Art School).

in political culture[13] (Everett 2012; Hayles 2012; Stiegler 2020b; Yamamoto 2013) and transmitted via Stieglerian "epiphylogenetic" memory (Stiegler 1998a, 175-79) from generation to generation through mimetic and technically supported habitual learning.

My proposal consists in the development of this understanding to include a new materialist approach to the phenomenon of human behavior, which cannot be reduced to the biological—or organizing organic matter such as the brain, DNA, or bodily dopaminergic systems. It must also include the social and the artificial [τέχνη], that is the noetic and its organizing inorganic material supports and "spiritual" cults, understood as cultivations of the localized, procedural, and embodied habits of cutting[14] or individuating the

[13] I bear in mind several ancient Greek notions in relation to the philosophy of culture (not to be opposed to technics), which I only have space to shallowly signal here without any in-depth elaboration: 1) Being κόσμιος (kosmios), that is well-behaved or well-ordered. It would also be appropriate to bring to mind the *"cosmetic"*; 2) πολιτεία (polītēíē) from which modern notions of the body politic and civil society derive, such as urbanity, politeness and to police; 3) πρᾶξις (prâxis) as embodied practices and conduct, embodying virtue in the form of common sense, i.e. φρόνησις (phronēsis); 4) ἔθω (éthō), that is ethnicity and ethos, ethical character or customs and habits; and, 5) τρόπος (trópos) understood as a style, direction, turning motion, manner, way of behaving in life, the use of discourse. When thought together and in simplification, we could say that the cultural body politic is one of steering or controlling the ways of ordering symbolic codes, rules, and even "laws" of behavior that differentiate civil life from barbarism and separate the possible from the socially impossible and taboo. Rules of etiquette are regulated and directed; such as, for example, correctly displaying the orthotic (exact) gestures and uses of a knife and fork to eat in a desirable way according to criteria of the social setting for a purpose that cannot be reduced to the simple drive to satisfy hunger. Thus, the flow of the cosmetic, polite, practical, ethnic, and stylistic modes of behaving and learning of *savoir-vivre* are subject to processes of discretization producing an image, i.e. γράφω (gráphō), or an alphabet of gestures, i.e. γράμμα (grámma), in the realm of imagination, including pictorial and literary depiction and idealizations conveyed by virtues such as *excellence*, which materialize themselves in the form of role models and best practice in the form of Stieglerian tertiary retentions. At the same time, this is a production of a certain aesthetic (looks and feelings) that lay the groundwork for sensibility itself. An example could be the discomfort felt when trying to adapt one's behavior to social norms in order to not be rude, that is perhaps moving from chewing with one's mouth closed in Western Culture to making loud lip-smacking sounds when eating in the presence of others in non-Western cultures. See "aesthetic dissonance" in Mróz 2019.

[14] When referring to cutting, I recommend reading the final section or "cay" on pharmacology in this paper. In terms of Karen Barad' agential realism, the smallest unit of analysis are phenomena. The phenomena of behavior would thus appear from within the relationship constituting doings and measuring agencies. When detecting cuts, cuts are made, and agencies are distributed. The agential qualities of phenomena are cut together

esprit or spirit/mind as a particular mode of perception and ways of feeling and living that support value. I have in mind cults of behaving and energizing characteristic of enthusiasm [ἐνθουσιασμός][15] like when we talk about cooperative "team spirit" in sports or business (Stiegler 2014b). Spirit value is orientated towards a certain virtue of elevation, surpassing of limits and generations of miraculous bifurcations,[16] called *ex-cellence*. So, to say behavior matters is to say, at least, that it is negentropic and anti-entropic, significant, and that it is physical.

This problem of selection that I have mentioned above may be considered as a problem of the heritable invention of milieus and behavioral stimuli of and by organisms, coupled organizational and temporal technical systems of both organic and inorganic matter. In terms of a phenomenological behavioral retention that I advance in this paper, the habits of organized organic and inorganic matter actively resist and anticipate forces of disorganization. They concern both biological entities and non-biological ones like crystals or the "free will" or choices exercised by molecules within behavioral chemistry. In other words, behaviors are metastable repeated traces, forms of memory, intra-acted[17] between the habituations of both organized organic matter and organized inorganic matter.

With that said, my approach in this paper follows a theoretical exploration that builds upon the Stieglerian undecidability and *différance* of the who and the what that is posed in the problem of anthropogenesis or the inven-

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or apart, which are performative decisions of the who or what that acts, these are agential cuts that temporarily stabilize certain properties and boundaries within phenomena (Barad 2007; Kleinman and Barad 2012; Barad 2014).

[15] Being "possessed"—"having" internalized or in terms of phenomenology: retained, so transformed into extra-conscious thought—a "divine," sacred, or singular essence, that is an "external" or socially shared property that is infinite and characterized by negentropy, which is differing from and deferring death, that is entropy, by energy sources that are renewable or not exhaustible.

[16] Stiegler has recently published a book titled *Bifurquer* on this topic (Internation Collective 2020).

[17] Intra-action is defined as follows: "Intra-action is a Baradian term used to replace 'interaction,' which necessitates pre-established bodies that then participate in action with each other. Intra-action understands agency as not an inherent property of an individual or human to be exercised, but as a dynamism of forces (Barad, 2007, p. 141) in which all designated 'things' are constantly exchanging and diffracting, influencing and working inseparably. Intra-action also acknowledges the impossibility of an absolute separation or classically understood objectivity, in which an apparatus (a technology or medium used to measure a property) or a person using an apparatus are not considered to be part of the process that allows for specifically located 'outcomes' or measurement" (Stark 2016).

tion of the human[18] [*l'invention de l'homme*] (Stiegler 1998a, 134-179), where the human is an endangered phenomenon itself. Now, the aesthetic qualities of movement and technical categories (Koppensteiner, Primes, and Stephan 2017), such as speed or precision, indicate that gestures and behaviors incorporated with instruments of changing and refining automated corporal habits towards idealized protentions of excellence are products of their mutual technogenesis[19] (Hayles 2012) and the development of biological organs, that is to say, habit as growth and loss of the flesh (Stiegler 2020b). When it comes to the apprehension of art objects as *objectus* (dance routines, songs, concepts, etc.) we usually evaluate the elevated and retained selections of performance[20] of these organic movements in the aesthetic features of the artifacts themselves, retentions that re-produce objects like paintings, dance, songs, and even abstract concepts like labor value.

My development focuses on behavior rather than action and performance because I view behaviors as "techno-logies" (Krzykawski 2019), a complex set of skills, repetitive programs subject to phenomenological retention and protention that form lifestyles. The phenomenon of behaving in a certain style arises from emergent transductive[21] relationships (De Assis 2017, 698-701) of mattering which shape new techno-social[22] norms and sensory habits, including long-term ways of envisioning the future, that is, protention. The term behaving conveys the possibility of learning and a qualitative measure of intentionality: adopting and changing norms between generations, and moreover it requires material re-minders or cues for regular attentive repetition and variation in order to conserve that pattern of mattering, which is human.

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[18] The human is not thought of as some innate property of homo sapiens like having self-consciousness, rather the human is a transient mode or pattern of rational existence supported by technics and performatively displayed by *homo sapiens*. That is to say, we are not intellectual, rational beings twenty-four hours a day, seven days a week.

[19] The idea that humans and technics have coevolved together.

[20] See the cay of this paper titled *pharmacological considerations*.

[21] This is a concept developed by Gilbert Simondon. "Transduction refers to a dynamic operation by which energy is actualized, moving from one state to the next, in a process that individuates new materialities" (De Assis 2017, 695). I do not have space here to analyze in depth the differences and similarities of the processes of individuation between intra-action that give shape to agency and temporal processes of transduction, i.e. immanent processes of differentiation and individuation that over time energetically form transducers or modulators of resistance that gradually mediate real potential and actual energy by means of information, and thus give shape to the event.

[22] This hyphen means that the two terms "technical" and "social" are co-constitutive and only emerge in a compositional manner in relation to the other. This signifies a transductive relationship.

However, because of transduction (resistance) of the flow of captured energy, intra-acted behavior is always threatened by the possibility of its spontaneous extinction (as well as re-emergence), that is loss or forgetting, and this includes the possibility of misbehaving (which is not necessarily a bad thing). In turn, I understand action in an Aristotelean fashion, as the materialization of potential energy—as in "passing to the act" (Stiegler 2009). In simplified terms, action conveys a thing done, a change of state, or a one-time act performed at a specific moment in time and it is also subject to entropic forgetting and decay without maintenance and work. For me, the singularity of the term action loses the broad sense of effort and automatization, or gradual passing into time, inherent in the life-long idiomatic formation, retention or learning of *ethos* and *hexis*: habits and routines, constitutive of *savoir-vivre* and *savoir-faire* in the realm of shaping synchronic human political life.

In my proposal of considering behavior in terms of its materiality, I would like to indirectly approach debates about actions and intra-activities (Barad 2007; Bennett 2001; Latour 1996; Ingold 1986) in Art Studies (Kontturi et al. 2018) from the sidelines by rooting behavior and habit[23] in Stiegler's philosophy. The phenomenon of behavior can be viewed as the outcome of intra-action between organized organic matter and its *milieu*. Intra-action connotes the relationships within phenomena that are doings (Kleinman and Barad 2012, 80) that carve the material agential properties of behaving. Stiegler's philosophy advances the pharmacology of cutting and an organological analysis of the project of behaving or what he calls acting out. I want to avoid confusing behavior (which organizes the passive and that, which is passing and has passed) with action (the realization of the virtual) when referring to the very similar posthuman discourses on intra-action (Kessler 2019, 80-86) from which behaviors emerge.

I view intra-action as a category that logically advances behavior. This is because the agential capacities of various behaviors and habits are ones that follow from or derive from agential cuts that are performed within the

[23] I would like to thank my reviewer for suggesting the analysis of the confluence of matter and behavior that make habits by deploying process philosophy's model of identity, such as Gilles Deleuze's process-orientated ontological understanding of habit. However, the Stieglerian analysis developed in this paper is one of that Stiegler already developed as a "theatre of individuation," since he uses the Deleuzian notion of repetition, which is fundamental in Stiegler's pharmacology. I have decided to omit this understanding of habit in favor of *hexis*. However, a Deleuzian development of habit in relation to art can be read, for example, in the article by Andrew Lapworth titled "Habit, art, and the plasticity of the subject: the ontogenetic shock of the bioart encounter" (Lapworth 2015).

world's intra-activity. In other words, intra-action (the relational emergence of agency) should be "cut" from my interests in behavior (the negentropic maintenance of agency which has relationally emerged and can be entropically lost), which is perceived, organized, and the temporal movement that is retained *a posteriori*, after the agential cut. This does not exclude the possibility of healing the cut and re-growing intra-actively. Nevertheless, the term behavior does not exist in a "vacuum", it is relationally "linked to and affected by the materiality and discursive frameworks with which it intra-actuated" (Barreiro and Vroegindeweij 2020, 141). In a sense, I aim at "delivering" a resituated humanist account of the phenomena of behavior, "saving" the techno-idiosyncratic transductive material agencies or retentions of the human in the negentropic becoming of the planet.

Therefore, I think within Stieglerian philosophy, according to which the rational and civil pattern that is the human is a temporary and mediated mode of existence always threatened by the possibility of a regress to subsist only in reduced modes of survival. It is a noetic being threatened by the loss of noetic functions and behavioral extinction leading to inhumane drive-based reactions. In other words, who or what is humane is constitutive of urbanity, civility, that is constantly threatened by regression and requires care (Cohen 2017). So, I have revalued behavior in terms of its habitual technicality. As a distinctive, perceivable and transmittable type of consistent ability to make (a *différance*) and make-do,[24] as τέχνη, I understand behavior as ordering transformative socializing procedural habits—a set of rigorous and disciplined routines—of embodying craftlike knowledges that one has "tasted," like *savoir-vivre*, *savoir-faire*, *savoir d'expérience*, and *savoir théorique*. In this regard, behaviors put various knowledges to action[25] (produce singular effects), and hence negentropically order, carve, a practiced phenomenological world. The body within which knowledge is stored may be any combination of organizing organic matter (e.g. muscles and brains) and organizing inorganic matter (e.g. machines and computers). Organized matter, technics, forms as a trace—and thus a memory as behavior (Delaney and Austin 1998; Keim et al. 2019)—of repeated singular actions that are elementary units of localized habits that constitute general modes of behav-

[24] The production or learning of skill (making of agency or the capacity to do), the ability to manage in spite of limitations and inadequacy, and the use of supplements, especially those that are "good enough."

[25] This, as Michał Krzykawski writes, "requires a new sense of critique and a new understanding of what knowledge-making practice actually means in relation to hypermatter" (Krzykawski 2019, 86). See footnote No. 8 in Krzykawski's article.

ior. Behavior is plural, pre-mediated or intentional (not necessarily conscious), and consists in temporal practices of making-sense, sensibility[26] [αἴσθησῐς], orientated not only by an end, but by the exteriorization or individuation of the Self,[27] which Stiegler claims is always inadequate or in default. Behavior, as a holistic complex of specific habits of organizing actions entangled with matter, itself emerges with inorganic material supports (laws, languages, metronomes, pens, videos, etc.), which also "behave" in a double meaning.[28] Later in this paper, I philosophically thematize this double meaning of behavior within the dual composition of the *pharmakon*, which is equally poisonous and remedial, destructive and productive.

Select problematics of behavior

In this section, I explore problematic or "fuzzy" definitions of behavior, which I understand philosophically as a phenomenon of existential retention and protention in matter (being and having). In other words, it is a selective storage of living experience (e.g. memories and dreams) in organizing organic matter (e.g. a brain, dopaminergic system, gut-brain axis, etc.) and

[26] Understood as sense perception, and as the ability to make sense, including the capability of (re)producing shareable knowledge for oneself (and others, including the self as other, that is an idealized and projected future "me" that does not exist but is projected as already having reached an understanding, that is has "acquired" knowledge, including knowledge of what is not yet understood) that becomes an understanding since one "knows" what "it" is like to "do" something. Consider the question "What is "it" like to play guitar?". The "it" here refers to a particular experience, and the *like* not only includes analogy or metaphor, but also the sense (at least symbolic) of a particular ordered set of repeated actions called playing guitar, which one also "likes". This repetition is not an exact repetition, but one that changes meaning and restructures sense perceptions, the brain and body, with each undertaken repetition.

[27] End as in goal, and end as in death. Behavior requires care, thoughtful maintenance since it is always threatened by the processes of extinction and forgetting (a fading of non-reinforced conditioned responses over time). Civilized, socialized, or "cultured" (as in *cultura animi*) behavior motivated by far-sighted desire is always threatened by its collapse into barbarism once desire is reduced to short-sighted drives and impulses.

[28] The dual behavior of matter can be illustrated by particle behavior and wave-like behavior of material particles at the atomic scale, such as the behavior of the photon or the duality of radiation. Moreover, arranged in greater masses, new behaviors emerge when particles join to create different states, for example, gas, liquid, solid, and superficial fluid, and which have new behavioral properties when subject to extreme conditions (when pushed to the limit). Information is also a state of matter. Matter is also organized technologically.

organizing inorganic matter (e.g. artworks, computers, globalized industries, etc.) (Parikka 2007; Alaimo 2010; Sampson and Mazmanian 2015; Rao and Gershon 2016). According to Stiegler, the latter are representative of processes of exosomatization at various levels of complexity (Stiegler 2020a) of the former. For example, neuroplastic embodied brains produce exosomatic organs like computers or other memory aid devices that necessitate coordinated gestures, e.g. to draw tally marks, which physically and structurally transform those brains over time through repetitive somatic routines and trained non-mechanistic habits of movements and gestures that selectively develop into specialized behaviors called *techniques*. Learning takes place through the aid of rote learning techniques that are transmitted via technical supports [ὑπόμνησις] or mnemotechnics which carry the memory of a past, selected experience, including traditions and customs, that is, ethos. Behavior conceived *a posteriori* emphasizes the captured and stored agency transmittable to an individuating social being, a being that consists in relations constituted after experienced perceptual selections, after the act or agential "cut," that is to say, decisive inclusion and exclusion of what is considered, in terms of a passing intra-action. The point in this section is to present various equivocal definitions in order to show that the materiality of behavior is left unthought.

The Merriam-Webster Dictionary defines behavior, a word first used in the 15th century and etymologically derived from "be" and "have," a form of existential retention, seizing or taking hold-of, as "the way in which someone conducts oneself or behaves;" "the manner of conducting oneself," where conduct is defined as "to cause (oneself) to act or behave in a particular and especially in a controlled manner;" and "the way in which something functions or operates." The Oxford dictionary provides similar definitions, including a teleological one, where behavior is intentional and directed at other people. As the Brazilian philosopher Filipe Lazzeri Vieira[29] notes, this is an extremely prevalent term that is difficult to pin-down. He tries to clean up the linguistic ambiguity with a much more rigorous analysis: "behavior is said in at least four ways: (i) as the occurrence of an organism's action

[29] Lazzeri Vieira is an epistemologist and philosopher of mind, action, and psychology. He is currently developing ways of conceptualizing behavior and some categories related to behavior. He undertakes an analysis of its theoretical definitions, and studies models of behavioral selection as determined by effects as well as the differences between overt and covert behavior, including the biological functions of behaviors and their intentionality or direction by goals. He takes the concept of action and analyzes action from a behavioral perspective, how action is related to other theoretical terms.

or reaction; (ii) as a class or pattern; (iii) as group behavior; and (iv) as a change or movement of an object" (Lazzeri 2014, 78). Lazzeri highlights two definitions. According to the epistemologist and philosopher of biology, mind, and language, Ruth G. Millikan (1993), "A behavior is […] at least the following: 1. It is an external change or activity exhibited by an organism or external part of an organism. 2. It has a function in the biological sense. 3. This function is or would be normally fulfilled via mediation of the environment or via resulting alterations in the organism's relation to the environment" (Millikan 1993, 137). What is more, "according to Moore, behavior is an event in which a functional relation exists (in the sense of a probabilistic correlation we can establish) between the environment and one or more neural or muscular systems of the organism responsible for movement or posture; and this functional relation, roughly, must conform to rules that define operant, reflex or other known behavior patterns" (Moore 2008, 66-68). What such definitions tend to exclude is the materiality of behavior. According to performative strand of new materialism, which is theorized—among others—by researchers like Karen Barad and Vicki Kirby, it is a mistake to presume forces as external to matter, something that "guides, structures, or grants meaning to its behaviors" (Gamble, Hanan & Nail 2019, 112; see also Barad 2007; Kirby 1997; Irni 2013; Jones 2015; Barclay 2017). A fault, thus, would be to conceptualize behavior as external to the forces of *hexis* (habit) that give it shape or as external to its environment, and as separable from them, as phenomena that can be distantly observed and measured without intra-actively transforming (selecting) what is being observed. They also signal that behaviors are general, repeatable, and controllable processes of organologically amassing already constituted relationships through established retentions between an organism, its environment, and itself.

The definitions above consider behavior *per se* as an abstract function or property of matter, including negentropic and entropic organisms. Let us take as an example the behavior of wood, which would be another way of phrasing the retained existential relationships in which the matter of wood habitually—defined here in analogical terms of modes of growth, general appearance, or shaping as used when describing crystal habits (Massumi 1992; Kontturi 2018; Bernstein 2002, 46)[30]—influences and is influenced

[30] Katve-Kaisa Kontturi has brought to my attention that the wood example is one that has been important for new materialisms. Extensive examples have been developed, for instance, by Brian Massumi, who provides an account of woodworkers collaborating with and getting to know wood. This is an account of what I would claim advances a Stieglerian

by its surrounding conditions. The behavior of wood, as properties of this differentiated material itself that comes in many states and varieties, lays at the foundation of determining the techniques of the luthier, the musician, and *musicant* (Rouget 1985, 102-103) or amateur. This includes its corruptions and failures. The poor acoustic properties of wood that had already habituated or characteristically shaped themselves into guitars in early jazz bands, groups that developed due to the industrial turn in music (Donin & Stiegler 2004, 6-20) lead to the invention (the who/what is undecidable) of the electric guitar, where wood and its emergent techniques have altogether bifurcated and been augmented inasmuch as to constitute an electric sonorous and acousmatic reality. One of the eventual doings of wood conjoined with people was to play jazz. Obviously, there is a relational and regional history to the behaviors of matter, and this history is an important factor in the development of various artistic techniques and accidents, both happy and deadly.

Stiegler's general organology is a methodological account of the material ontological history of a plethora of instruments—an account that extends beyond musicology—in the form of the study of all instruments, or technologies and devices like the computer, their history, cultural applications, classifications, and other technical aspects concerning how certain technologies consist in their effects, like produce an aesthetic, perception, sound, or behavioral change. So, when thinking of the habits (ways of growing, giving an appearance or look, shaping) of organizing organic and inorganic matter constitutive of temporally organized endosomatic and exosomatic movements, I would like to signal that the appropriate method for advancing the study of behaviors would be through general organology. Just as wood habituated into music, so do behaviors selectively develop in terms of their looks, feels, and complexity.

However, before attempting to draw any historical account another problematic of behavior needs to be raised. It is found in the distinction between quantification and qualification. Behavior—which needs to be attentively

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understanding of *otium*. It is an extra-ordinary *time for care,* rhythm of thoughtful commerce between the forces of wood and the woodworker that shape an emergent temporary consistence (see: the section "Subsist, Exist, Consist" in Ars Industrialis's vocabulary) that is not reducible to subsistence, not reducible to a calculated trade of *negotium*, a form of life shaped by the hyperindustrial reductive logics of the market. These are singular practices of the forces of the Self, which is always "stuck" in its own inadequacy and always beyond it-self. It emerges within the struggle of collaborating with materials in order to overcome "stuckness" or *anthropy* in the process of individuation (Kontturi 2018, 104-110; Stiegler 2011a; 2018; "Vocabulary—English Version | Ars Industrialis" n.d.).

developed or else it goes extinct (back to the potential realm, to the "before" of the agential cut of intra-activity)—can undergo quantification (measurement, and thus, selection) and repetition. Yet, it is an ongoing iterative indeterminate process. This is even more perplexing when it is subjugated to axiological arbitration, which is an attempt to qualitatively evaluate behavior as good or bad, caring or evil, respectable or scandalous, toxic or helpful. Multiple cases of the ambiguity of behavior can be imagined, such as occupational hazards or the mania that is provoked by the toxicity of the artist's lead paints which induce hallucinations (Montes-Santiago 2013), or the mispractices of not properly disposing of those paints, which ecologically threaten the environment with pollution. Still, such a toxic material was necessary for constituting an artistic epoch and its material practices of care. This leads us from one set of selection criteria to another: from a historical account to a philosophical one.

Thus, the general problematics of behavior studied philosophically are problems of materially re-objectifying what humans make-sense as abstract and what resists fixed objectivity, which makes it a philosophical problem *par excellence*. It is a matter of materializing behaviors. However, we cannot physically grasp behavior with our hands like a pen or any other concrete, tangible object regardless of size. We grasp behaviors with the embodied and materially supplemented mind, those grasps are stored in each practiced gesture and devices of recording. Behavior, although perceived, is not exactly present-at-hand. This is behavior as theorized by science and marketing: behavior that needs to be "repaired" in order to reach some goal set by scientists or marketers. Theorization itself is a sort of meta-behavior of complex decision making or selection that scrutinizes a "failure" of perceived behaviors, examples of such theorization lay in the doings of con-artists, pick-up artists, or even ourselves when we try to figure out why certain behaviors fail to be operational or useful. Behavior is not exactly ready-at-hand either, since everyday, ordinary, unproblematic, not theorized habits, especially in the case of addiction, are states of simultaneous disrepair of the organism and restoration of the habits. At times, we conduct ourselves automatically, without consciously theorizing why; nevertheless, subconscious "theories" may in fact hypomnematically develop or grow into the living body through habit (*hexis*).

We may also structurally problematize human behavior as a mode of being in-itself [*en-soi*] and for-itself [*pour-soi*] (Merleau-Ponty 1963). Human behavior, without forgetting its corporeal materiality, is dynamic, and as a subjective embodied experience of repeated selection and loss, is a tem-

poral object of phenomenological inquiry. Nonetheless, we can also easily and clearly do many things with behavior onto-epistemologically and technically: it can be observed and ignored, identified and misidentified, turned into a stereotype, manipulated and fabricated, arranged and re-arranged, and so on. Of course all of these *actions* and *reactions*, interactions and intra-actions, are modalities of behaviors themselves, which is to say "matters of practices/doings/actions" (Barad 2003, 802) or a secondary "enactment of boundaries" (Barad 2003, 803) that must be studied in light of the way they self-stabilize and destabilize differential boundaries by the active participation of matter, of which one form includes the material instruments, devices, tools, and technologies, in the "world's becoming." The materiality of the human flesh, and human organizations which materialize, matters just as much as every other body of material force (Barad 2003, 809). So, the term "behavior" is quite significant and dependent upon material conditions, yet it is also ambiguous.

To recapitulate what has been developed in this section, I have presented my understanding of behaviors (observable movements) and habits (*hexis*), and I have proposed a shift from the abstract (like the past and future, which do not exist) to the material (present). The problematics of behavior in terms of its definition revolve around equivocal definitions that tend to overlook the mattering of existential retention, of being and having at the same time, of be-having. Their abstract functions, or habits, develop in time and can be "passed down." A transitory example on the behavior of wood was described. Stiegler's general organology and pharmacology (cutting that is both positive and negative) can provide a historical account of some aspects of behavior in terms of the relations between endosomatic and exosomatic organs as well as collective social organizations and institutions. From such an account, other problematics should be included, such as the problem between measuring behavior quantitatively and qualitatively; and studying behavior from a philosophical perspective, which is not necessarily limited to ethics. Two examples were provided, one in Heideggerian terminology in terms of presence-at-hand and readiness-at-hand, and the other in Merleau-Ponty's modes of being in-itself and for-itself. Another path or road of meaning-making is a route paved by new materialist thinking. What follows are several short exploratory developments from this section that can be read in any order.